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ABSTRACT

Designed to assist vocational agriculture teachers in keeping abreast of the most recent instructional developments in the field, this resource guide contains an annotated list of print and non-print, commercial and non-commercial materials available in the field of agriculture education. The resource guide is divided into three sections. The first section contains occupational information which can be used to complement technical instruction and as a source of guidance information. The second section provides an annotated listing of a variety of printed and non-printed curriculum materials including guides, learning activity packages, course outlines, books, transparencies, films, and filmstrips. Topic areas included are animal production, crop production, agricultural business, agricultural mechanics, horticulture, agricultural resources, career education, and miscellaneous agriculture information. Each listing provides the source of the material, a brief description, and the cost. In addition, this section provides a list of periodicals and journals related to agriculture. The names and addresses of trade and professional organizations are included in the last section. (LRA)

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Resource Guide to Competency-Based Vocational Education:

AGRICULTURE

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TABLE OF CONTENTS

INTRODUCTION	1
OCCUPATIONAL INFORMATION	4
CURRICULUM RESOURCES	13
PRINTED MATERIALS	15
Animal Production	16
Crop Production	21
Agricultural Business	29
Agricultural Mechanics	36
Horticulture	53
Agricultural Resources	60
Career Education	65
Miscellaneous Information	67
NON-PRINT MATERIALS	71
Animal Production	72
Crop Production	81
Agricultural Business	86
Agricultural Mechanics	88
Horticulture	93
Agricultural Resources	103
Career Education	107
Miscellaneous Information	110
PERIODICALS AND JOURNALS	113
TRADE AND PROFESSIONAL ORGANIZATIONS	123

INTRODUCTION

WHAT TO TEACH?

A perennial problem in curriculum development is the determination of what should be taught. This problem has a direct impact on everyday classroom instruction. In vocational education, this problem takes on an added dimension. If an occupational field were to remain stabilized in terms of invention, technique, and specialization, few changes would be anticipated and the instructional development process would be greatly simplified. However, most occupational fields are experiencing rapid and continual change.

UPGRADING

It is not enough to simply identify and select for inclusion in the instructional program the skill and knowledge a worker has needed in the past. The rapid pace of technical and occupational change necessitates frequent upgrading and restructuring of the instructional program. In order for occupational education to be relevant, it is necessary for the classroom teacher to base instruction on the actual skills, knowledge, and attitudes that are currently needed on the job.

CURRENT, VALID INFORMATION

This publication is designed to assist the classroom teacher in keeping abreast of the most recent instructional developments in the field. The information included is current, and has been identified and validated by practitioners in the field.

Not only is it important for vocational educators to keep abreast of the technical progress of their field of study, but they should also know about current developments in design. Included in this guide are new developments in instructional technology that would be useful for an instructor to examine.

The resource guide, which is area-specific, is accompanied by a separate common core of materials for implementing CBVE programs. This common core can be used in conjunction with any or all of the different resource guides. The resource

RESOURCE GUIDE

guide is divided into three sections. The first includes occupational information which can be used to complement technical instruction and as a source of guidance information. The second section is a listing of a variety of annotated curriculum materials including guides, learning activity packages, course outlines, books, transparencies, films and filmstrips. Finally, the names and addresses of trade and professional organizations are included in the last section.

COMMON CORE

The common core is also organized into three sections. The first section describes how to develop a competency-based instructional program. A listing of general resources which would be useful in developing a CBVE program appears in the second section. Finally, a description of the information resources within Maryland and the nation is provided in the section on curriculum support services.

There are a number of practical points which the individual should keep in mind when using this guide:

EXAMINE EXISTING MATERIALS

1. Every effort should be made to collect and examine existing curriculum materials. Not only can a great deal of duplication of effort be avoided by utilizing existing information, but an understanding of the current state-of-the-art provides a solid foundation on which to structure program development.

ON-GOING CURRICULUM DEVELOPMENT

2. Curriculum development should be considered an on-going process, not a one-time effort. This process can be simplified by using a systematic approach for developing and evaluating the instructional program. Many of the curriculum resources in this guide have successfully been developed through the use of systems approaches. A proposed instructional systems approach is discussed in the next section.

COMMITTEES

3. It is suggested that curriculum development be approached through the use of committees. Committees can provide a forum for discussion

and a means of obtaining feedback on ideas. In addition, the work load can be shared among the members of the committee.

RESOURCE CENTER

4. Finally, a curriculum resource center can be a useful tool in curriculum development. It is advantageous to establish a center which can serve as both a central place to collect curriculum materials and as a convenient place to work. If personnel, funds, and other resources make a school-based center unreasonable, there are resources in Maryland and nationwide which educators are encouraged to use. These resources are listed in the Curriculum Support Services Section of the common core.

SUMMARY

In summary, the overall purpose of this guide is to help facilitate the important task of program development and upgrading. The teacher is provided with information about resources materials which can be examined, selected, and integrated into the instructional program. In addition, the resources annotated should also assist curriculum specialists, administrators, and supervisors in the development of competency-based instructional programs.

OCCUPATIONAL INFORMATION

The occupational information in this section can be useful to the classroom teacher in the following ways:

REFERENCE INFORMATION

1) It can serve as a source of reference information from which instructional materials can be developed.

CAREER INFORMATION

2) It can provide career information to students.

COURSE DESCRIPTION MATERIALS

3) It can be used to develop public relations and course description materials for use by guidance counselors, parents, and other interested individuals.

CAREER EDUCATION

With today's emphasis on career awareness and specialization, vocational teachers should be well informed about the career opportunities in their particular field. Teachers should convey to their students the qualifications, working conditions, employment outlook, required job-entry skills, and other career-related information of the occupation. It is not enough to leave the vital career facts of an occupational field to chance exposure.

The material that follows provides basic information that instructors can use to convey an understanding of different occupational aspects of the agricultural industry. The information was taken from the Occupational Outlook Handbook. This information should be supplemented with field trips, guest lectures, career days, and other occupational and guidance information.

PUBLIC INFORMATION

The information in this section can also be used to develop materials for an area that is often overlooked, namely, public information. Students often like to know about a field of study before they take courses. Parents want to know about the occupational opportunities available to their children. School counselors are required to provide current occupational information to students. The information in this section can be used to develop such descriptive materials in the form of booklets, course descriptions, and career information sheets.

AGRICULTURE

Agriculture—broadly defined—is a genuine growth industry. It has become a vast and vital industry that reaches into all levels of society and into dozens of other industries and professions. It employs millions of persons—both professional and nonprofessional. For several decades, U.S. agriculture has been immersed in a technological revolution which has had a tremendous impact on the industry's labor force—both in numbers and composition. Agriculture, or agribusiness as it is more commonly referred to today, is a multifaceted complex that produces food and fiber and then assembles, processes, stores, transports, and markets it to meet ever-growing demands. Consumers now insist upon more attractively packaged and ready-to-cook foods. They also demand that it be available all year. Thus, science and business are as much a part of agriculture today as is farming. As a result, employment needs in agribusiness have changed significantly and will continue to change.

Tomorrow's agriculture and related natural resource management areas are expected to be more dynamic. They will offer many more and diverse kinds of employment opportunities. In addition, the U.S. Department of Agriculture has many diverse services organized to help increase the productivity of agriculture, to regulate practices, to protect the environment and the consumer, and to expand research and educational programs.

The ever-increasing technology has decreased the need for nonprofessional workers (farm or agribusiness laborers) while simultaneously increasing the need for professional workers (college-trained personnel). Present trends are expected to be amplified in the decades ahead. Enrollment in the 70 Land-Grant Colleges of Agriculture and Natural Resources increased from 35,000 in 1963 to 82,000 in 1974. A recent report showed an additional 33,000 agricultural students currently enrolled in the many non-land-grant 2- and 4-year colleges. Increased demand for food and fiber and continued public concern about the quality of the environment, proper management of our renewable natural resources, and consumer protection issues will cause these upward trends in college enrollment in agriculture and related fields to continue.

Opportunities on Farms

In brief, fewer farmers and farm workers will be needed to produce America's food and fiber products. For instance, in 1950 the average farmer could produce enough food and fiber for about 16 other persons. Today, each farmer feeds and clothes 53 other persons. By 1980, it is expected that each farmer will be able to produce enough for 65 persons.

Employment on U.S. farms and ranches has declined from 7.2 million in 1950 to nearly 3.5 million in 1974. By 1985, with a continued increase in size of farms and greater use of power and machinery, there are expected to be 2 million farm workers. Farm output has increased by 52 percent since 1950. This was accomplished with 17 percent fewer crop acres.

This phenomenal increase in farm productivity was accomplished by significantly increased use of farm power, machinery and equipment, higher application of fertilizers and other agrichemicals, improved crop varieties and strains of livestock, and improved farming practices in general. Farms increased in size and considerably more total capital is required of each farm operator. (See accompanying table.)

Management is the key to success in modern farming. Today's farmers need a much higher level of knowledge and skills than did their predecessors. For example, the dairy farmer used to feed each cow an amount of grain based on the amount of milk she had produced the previous day or week. Modern dairy farmers feed their cows on the basis of their potential—"pushing" potential high-performance cows to their limits, cutting back on expensive feed for cows that already have peaked out. Figuring the potential is a much more difficult technique than weighing milk.

The need for better trained farm operators and farm workers will increase as farming becomes more scientific. The knowledge and capital required to start farming a generation ago is no longer adequate. College training is becoming the rule rather than the exception for young "commercial" farmers. It gives them the technical basis that they need to keep up with new developments in research and technology and to apply them intelligently on their own farms. Biology, engineering, chemistry, and agronomy—not to mention economics, marketing, and accounting—are part of the necessary kit of tools for a successful farmer today.

Capital requirements are another obstacle the beginning farmer must overcome. It was estimated that the average commercial farm in 1974 had 470 acres, with a value of more than $190,000 in real estate,

livestock, crops, and equipment. Regionally, the estimated value of commercial farms varied from an average of $70,000 in Appalachia to $475,000 in the Pacific region.

For the person who has the training, the capital, and the management ability, the modern farm can offer much higher incomes than the old-style farm. Nevertheless, while agriculture production will still offer challenging and rewarding careers with larger incomes and better living conditions than it used to, it will offer them to fewer and fewer people.

Opportunities of Specific Types of Farms

Although the number of farms and farm jobs is decreasing, some desirable and rewarding opportunities remain in agriculture. The decision to enter farming may be made simply because an opening exists on the family farm or on a farm nearby. To be successful, however, young people should know the requirements of the specific type of farm operation they wish to enter. They should take into consideration their aptitudes, interests, preferences, experience, knowledge, and skills in directing labor and handling livestock and machinery. Young people also must consider family labor supply and financial resources, as the labor and capital requirements for an operation of adequate size vary widely from one type of farm to another.

A realistic decision to go into farming can be made only in terms of a particular area or community. This section evaluates, from an occupational standpoint, some of the more common types of farms. The accompanying table gives illustrative data on size of farm, capital requirements, and net farm incomes received by operators of typical or representative farms in various parts of the country. Many farms are larger than these and offer more return than is shown here. Some are smaller and offer the operators little income or opportunity to improve their status without major changes. On most of the farms, the major part of the work is done by the farm operators and their families. Whereas some of the smaller farms hire workers only during the peak labor season, large ones often use hired labor the whole year.

Table 1. Average size of farm by product and location, capital invested, and net farm income on commercial farms, 1974

Type of farms and location	Size of farm as measured by	Land and buildings	Capital invested in–			Net farm income
			Machinery and equipment	Livestock	Crops	Total	
Dairy farms:							
Central New York	40 milk cows	$61,200	$25,347	$23,547	$16,764	$126,855	$15,364
Southeastern Wisconsin	40 milk cows	120,212	26,593	25,436	18,352	190,593	19,857
Egg producing farms, New Jersey	5,550 layer chickens	66,280	3,655	9,596	0	79,531	6,043
Broiler farms, Georgia	44,600 produced annually	33,109	6,615	991	330	41,045	2,663
Corn Belt farms:							
Hog-beef feeding	280 acres of cropland	226,440	28,119	49,536	43,302	347,397	14,749
Cash grain crop	375 acres of cropland	428,400	45,526	0	6,186	480,112	30,423
Cotton farms:							
Mississippi Delta	900 acres of cropland	694,237	102,367	0	0	796,604	100,017
Southern High Plains, Texas:							
Irrigated	870 acres of cropland	632,961	54,899	0	0	687,860	73,412
Nonirrigated	860 acres of cropland	296,437	21,558	0	0	317,995	66,810
Tobacco farms, Coastal Plain, North Carolina	50 acres of cropland	67,106	7,391	783	1,423	76,703	7,837
Tobacco-livestock farms, Bluegrass area, Kentucky	64 acres of cropland	188,190	9,400	12,119	4,722	214,431	14,950
Wheat-fallow farms:							
Northern Plains	1,800 acres of cropland	303,705	53,560	0	0	357,265	30,694
Central Plains	1,800 acres of cropland	379,440	53,560	0	0	433,000	63,334
Pacific Northwest	1,800 acres of cropland	548,505	66,950	0	0	615,455	69,484
Cattle ranches:							
Northern Plains	307 beef cows	513,254	27,677	107,896	10,661	659,488	34,714
Northern Rocky Mountain	314 beef cows	342,491	26,271	100,616	20,702	490,080	34,272
Southwest	278 beef cows	678,356	16,416	91,434	0	786,206	11,319
Migratory-Sheep Ranches, Utah-Nevada	2,025 breeding ewes	205,571	20,286	91,757	2,846	320,460	27,263

[1] The information presented here is on an owner-operated basis, primarily for comparability between types of farm. Net farm income is the combined return to total capital plus return to operator and other unpaid members of the family for their labor and management. No allowance has been made for payment of rent, interest, or mortgage.

SOURCE: Prepared in the Commodity Economics Division, Economic Research Division, U.S. Department of Agriculture.

The figures in the table on capital invested mean that the operator controls or uses resources valued at that amount. Many farmers supplement their own capital with borrowed funds, others rent part or all of the land they use, thus reserving more of their funds for the purchase of livestock, feed, machinery, and equipment. Still others have partners who provide most of the working capital. For example, many farmers who raise broilers are in partnership with a feed dealer.

No brief general statement can be made about specialization versus diversification in farming operations that would apply in all parts of the country. The general trend favors more specialized farming. Farms that produced many products a generation ago now may produce only two or three. Efficient production of most farm products requires a substantial investment in specialized equipment. To receive the full benefit from this investment, the farmer must produce on a large scale. Two other factors contributing to specialization are the increased emphasis on quality of farm products, and the greater knowledge and skill required for effective production. Few farmers, however, find it advantageous to produce only one product. The main reasons for producing more than one product are the desirability of spreading risk, the more effective use of labor (particularly family labor), and the fuller utilization of most other resources than can be realized in a one-product system.

Dairy Farms

While dairy farms are located throughout the country, their greatest concentration is near large population centers. There is work to be done every day thoughout the year on dairy farms, and they tend to be family operations. However, some farms are large enough so that more than one worker is required to handle the chores and equipment. In this way, the work can be divided up to allow some workers to take a day off.

Dairy farmers who produce their own feed have a variety of jobs to accomplish. Dairy herds are decreasing in number, but are becoming larger and more productive each year. Income from dairying is distributed somewhat evenly throughout the year.

Livestock Farms (Other Than Dairy and Poultry)

A livestock farm may handle only beef, swine, sheep, or horses. But it also may combine all of these enterprises. Persons who like livestock and who have developed some skills and knowledge about them and the mechanical equipment necessary for handling these farms can find livestock production rewarding and profitable. Farm chores tend to be more flexible than on dairy farms. Most labor tends to be family labor.

Various systems of livestock production allow for some specialization so that the system can fit the size of farm, the types of feed production available locally, and the needs of consumers. Incomes on livestock farms tend to be variable, and risks are quite high. Capital investments in housing and livestock can be considerable. Ability to understand the markets and to adjust management practices to changing costs and prices is the key to success in livestock production.

Poultry Farms

Poultry farms concentrate on egg production or on the production of broilers. Poultry farmers do not raise their own feed. They purchase feeds which are suited to their specific purposes. As in many farming enterprises, poultry farming requires specialized skill. The handling of the birds and of the mechanical feeding equipment requires specialized knowledge but usually not much physical strength. Poultry farms often make considerable use of family help.

Poultry farmers often experience sharp year-to-year fluctuations in income. These operations have high cash costs and thin profit margins. Many broiler producers have contracts with a financing agency such as a feed dealer, so that the profit margin can be somewhat dependable.

Cash Grain Farms

The production of corn, wheat, grain sorghums, and other grains requires the use of tractors, farm machinery, and equipment. For many of these farms the work requirements are seasonal. That is, during the soil preparation, planting, and harvesting times the farm operators are very busy. During other seasons and in slack periods the farmer often will seek employment off the farm.

Knowledge of farm machinery, seed bed preparation, varieties, planting times, depths, as well as methods of weed, insect, and disease control are required if producers are to be successful. Cash grain farmers are subject to major risks due both to weather and prices for their grains. This is particularly true for specialized crop farmers. Investments in land, power, and equipment on the usually large acreage can be very high. Thus, total risk is very high and management is critical.

Cotton, Tobacco, and Peanut Farms

Cotton, tobacco, and peanuts are grown on farms of varying size, depending upon the region. As in many other products, growers have been forced to enlarge their acreage and often to diversify. Still many farms are small and are part-time farming operations.

Some of the cotton farms, particularly in the West and Southwest, have gone under irrigation. Other

such farms in the Southeast have added beef cattle or poultry to their farming operations. Prices of these crops are usually government supported, so price risks tend to be less than for other cash-grain farms.

Specialty Crop Farms

Specialty crop farms may produce potatoes, grapes, oranges, sugar cane, melons, broomcorn, popcorn, or a combination of these and other specialty crops. These farms exist because of the demand for the product and because of the unique background, skills, and resources which a farmer has for this kind of production. These enterprises often require seasonal workers and relatively expensive specialized equipment. These producers need specific skills which may be obtained through experience or through special training.

Profits from specialty farms usually vary greatly from year-to-year. Specialty crop farmers usually study the demand picture well and make adjustments so that the particular operation will produce according to the effective demand.

Private Outdoor Recreation Farms

Since the demand for outdoor recreation facilities exceeds the supply, many farm operators in the vicinity of national, State, and local parks, or near wildlife preserves, have taken advantage of their location to establish recreation businesses. These farmers sell hunting or fishing rights to individuals, form hunting clubs, or establish private campgrounds. Some will enlarge or improve their farm ponds or irrigation reservoirs which they then stock with fish or make available for swimming and boating. Old farm buildings, sheds, and barns may be converted into riding stables or horse boarding stables. In making these facilities available, many farmers have converted a liability into an asset. Such farmers only represent 1 percent of all farms in the United States, but their numbers are increasing. The average amount reported earned from such recreation activity was about $1,630 per farm. For persons with recreational interests in favored locations, this type of supplemental recreational enterprise can add substantially to farm income.

Other Specialty Farms

Agriculture also includes such specialized areas as nurseries, greenhouses, honey bees, fur farms, and riding stables. For many of these, special knowledge and skilled management are required. Risks are high—but, for persons who have the abilities and the resources, these ventures are often profitable and rewarding.

Training Opportunities Available for Farm Production Jobs

A good initial background in farming can be obtained by growing up on a successful farm. Necessary experience also may be gained by working as a closely supervised tenant or hired worker on a successful farm. In addition, college training in agriculture and agricultural business management is of sustantial value to the modern farmer.

Several types of vocational training are available under federally assisted programs. Training is offered in the following ways:

1. High school courses in agriculture.
2. Short courses for young farmers at colleges of agriculture, including intensive training in farm planning, farm structures, construction, welding and related shop and repair work, as well as instruction in crop production, livestock feeding and management, recordkeeping, and other aspects of farming.
3. Adult evening classes (or day classes in off-seasons) that provide intensive instruction in subjects such as land and soil management, crop and livestock production, new technology and equipment, and financial management.

Opportunities in Off-Farm Agribusinesses

The same technological revolution that hit the farm sector simultaneously extended itself into the off-farm agribusiness sector, altering farm product assembling, processing and handling practices. It changed the organizational structure of both the farm and off-farm sectors of today's modern agriculture. These technologies significantly increased the capital requirements of the off-farm sector. It also called for much greater managerial and technical knowledge and skills on the part of both professional and nonprofessional workers in the total agricultural complex. As a result, the number and kinds of personnel needed in the off-farm agribusiness labor force have changed significantly over the past three decades and they are likely to continue to change.

For example, as farms increase in size, more and more custom services will be used by farm operators. Operating this custom equipment will require special training and skills. Thus, there will continue to be a wide range of occupations which require technical knowledge below that required at the 4-year college level. Many 2-year community-junior colleges and vocational and technical schools now provide excellent training to meet these needs. Examples of such jobs include assistant feedlot managers, feed mill supervisors, general farm and ranch managers, irrigation system servicers, farm service center assistant managers, fertilizer and pesticide applicators, farm welders, petroleum distributors, diesel mechanics, agricultural accountants, elevator operators, fertilizer bulk blending plant assistant managers, and artificial inseminators.

Persons with 4-year bachelor's

degrees in agriculture will be increasingly needed in the off-farm agribusiness professional occupations. Nearly one-half of 4-year agriculture college graduates are now employed in off-farm positions in agribusiness. They have taken jobs such as sales and technical service center managers with agricultural supply firms selling feed, seed, fertilizer, agrichemicals, power, machinery, equipment and farm building supplies.

Others have taken jobs as buyers for meatpackers and other food processors; in advertising and public relations work; in management positions with agricultural product assembly, storage, processing and marketing firms operating in both the United States and abroad. Some take jobs with farm cooperatives, food chains, dairy product distributors, and farm credit agencies. Others work as agricultural consultants, economic analysts, field contractors, agricultural attaches, insurance specialists, farm appraisers, agrichemical applicators, inspectors of food processing plants, landscape architects, farm magazine writers, farm radio and TV broadcasters, and meat and grain inspectors and graders.

Occupations in the Public Sector of Agriculture

The public service sector of agriculture provides employment opportunities for College of Agriculture bachelor's degree graduates in positions as soil conservationists, vocational agriculture teachers, county extension directors, 4-H agents, rural and community planners, Farm and Home Administration supervisors, Department of Agriculture inspectors, Crop and Livestock Reporting Service employees, Peace Corps workers, vocational technical school teachers, agricultural market reporters, and agricultural attaches.

Those having advanced degrees in agriculture (master's and Ph. D. degrees) qualify for positions as educators, industry research and development scientists, agribusiness managers and upper level administrators, veterinarians, and researchers or administrators with governmental agencies such as the U.S. Department of Agriculture. In addtion to the governmental agencies, numerous private foundations also employ agricultural scientists, technicians, and administrators. (For more detail, see section on agriculture-related professional occupations.)

Occupations in Renewable Natural Resource Management

Proper management of our renewable natural resources is a national obligation. It involves the wise use of land and forests, water and minerals, and fish and wildlife. It involves preserving parks and other natural recreation areas (including unspoiled wilderness, virgin prairies, and scenic riverways).

Soil must be managed; timber must be used wisely; wildlife must be protected; water must be conserved and protected from pollution. Land-use planning is becoming more important as public pressures build both to protect our farm land to produce more food and fiber and to devote more land to highways, urban development, mining and quarrying, lumbering, and recreation. People with more leisure time are voting for more park facilities and lakes, planned recreation programs, camping sites, hunting preserves, fishing facilities, and areas for water sports and nature studies.

Therefore, many opportunities are available for persons holding degrees from colleges of agriculture and natural resources (Forestry) in such curriculums as: Natural resource management, wildlife conservation, forestry, wood science and technology, environmental biology, fisheries biology, landscape architecture, horticulture, urban and regional planning, urban forestry, soil and water conservation, crop protection, pest management, park and recreational area management, land-use planning, and range management. Many of these are relatively new college degree curriculums, brought on by greater public concern for proper management of the Nation's renewable natural resources and pressures to provide facilities for use of leisure time.

People trained in the above curriculums take jobs as park and recreation area managers, park rangers, regional park supervisors, outdoor recreation specialists, private recreation firm managers, soil and water conservationists, wildlife managers, foresters, forestry technicians, environmental biologists, range managers, fishery biologists, and land-use planners. (See the statement on Conservation Occupations elsewhere in the *Handbook*.) Some work in urban agriculture—parks, zoos, botanical gardens, golf courses, open areas, and landscaping; and in city and county planning.

Sources of Additional Information

The most significant sources of information and guidance available to farmers are the services provided by the land-grant colleges and universities and the U.S. Department of Agriculture, Washington, D.C. 20250. These services include research, publication, teaching, and extension work. The county agricultural agent is often the best contact for the young person seeking advice and assistance in farming. The Farmers' Home Administration system of supervised credit is one example of credit facilities combined with a form of extension teaching. Organized groups, such as the Future Farmers of America and

the 4-H Clubs, also furnish valuable training to young farm people.

For information about opportunities in off-farm activities, contact individual colleges of agriculture or the U.S. Department of Agriculture, Washington, D.C. 20250.

AGRICULTURE-RELATED PROFESSIONAL OCCUPATIONS

Nature of the Work

The discussion that follows deals primarily with job categories that are generally termed professional fields. These occupations usually require at least a bachelor's degree, and master's and Ph. D. degrees are becoming increasingly necessary. Some of these jobs are discussed more fully elsewhere in the *Handbook*. (See index.)

Agricultural economists (D.O.T. 050.088) deal with problems related to production, financing, pricing, and marketing of farm products both in the United States and in foreign countries. These economists are factfinders, evaluators, analysts, and interpreters who provide economic information to farmers, agri-business firms, policymakers, consumers, and other interested persons. They provide cost-benefit analyses for evaluating farm programs at the National, State, and farm level. They study the effects of mechanization, technological advances, and other developments that influence the supply of and demand for farm products and the accompanying effects on costs and prices of farm products.

Agricultural engineers (D.O.T. 013.081) develop new and improved farm machines and equipment; deal with the physical aspects of soil and water problems in farming; design and supervise installation of systems for irrigation, watershed protection and flood prevention; devise new techniques for harvesting and processing farm products; and design more efficient farm buildings.

Agronomists (D.O.T. 040.081) are concerned with growing, breeding, and improving field crops such as cereals and grains, legumes and grasses, tobacco, cotton, and others. They do research also in the fundamental principles of plant sciences.

Animal physiologists (D.O.T. 041.081) study the functions of the animal body and any of its parts.

Animal scientists (D.O.T. 040.081) deal with production and management of farm animals. They are concerned with genetics, nutrition, breeding, physiology, environment, and animal health.

Veterinarians (D.O.T. 073.081) inspect livestock at public stockyards and points of entry into the United States; inspect establishments that produce veterinary biological supplies; administer tests for animal diseases; conduct programs for the control and eradication of animal disease; conduct research on livestock diseases and vaccines for disease control; work directly with farmers in protection or restoration of livestock health; and provide services for the health and care of small animals and pets.

Geneticists (D.O.T. 041.081) try to develop strains, varieties, breeds, and hybrids of plants and animals that are better suited than those presently available for the production of food and fiber.

Microbiologists (D.O.T. 041.081) study bacteria and the relation of other microorganisms to human, plant, and animal health and the function of these microorganisms in the making of products such as vitamins, antibiotics, amino acids, grain alcohol, sugars, and polymers.

Plant scientists (D.O.T. 041.081) study plant diseases and their nature, causes, and methods of control. They also study the structure of plants and the growth-related factors in plants. Methods of improving fruits, vegetables, flowers, and ornamental plants are also of major concern.

Plant quarantine and *plant pest control inspectors* (D.O.T. 041.081), who are trained in the biological sciences, supervise and perform professional and scientific work in enforcing plant quarantine and pest control laws. Plant quarantine inspectors inspect ships, planes, trucks, and autos coming into the country to keep out dangerous insect pests. Plant pest control inspectors conduct programs to protect the crops of the country by prompt detection, control, and eradication of plant pests.

Entomologists (D.O.T. 041.081) study insects both beneficial and harmful. They identify the populations and distributions of insects that injure growing crops and animals; that harm human beings; and that damage agricultural commodities during shipping, storage, processing, and distribution. Their research is directed toward finding means by which these harmful insects may be controlled, and desirable insects managed to increase their impact on pests.

Foresters (D.O.T. 040.081) are concerned with the protection, production, processing, and distribution of our timber resources. They also study means by which wood may be seasoned, preserved, and given new properties.

Human nutritionists (D.O.T. 077.128) are concerned with the science of food, nutrients, and other substances; their action, interaction, and balance in relation to health and disease; and the means by which the body utilizes these substances. They also study certain social, economic, cultural, and physiological implications of food and eating.

Rural sociologists (D.O.T. 054.088) study the structure and functions of the social institutions (customs, practices, and laws) that are a part of rural society or affect it.

School teachers (D.O.T. 091.228) in vocational agriculture and related fields supervise and give instruction in farm management, agricultural production, agricultural supplies and services, operation and repair of farm equipment and structures, inspection and processing of farm products, ornamental horticulture, conservation of natural resources, and uses of forests.

Farm managers, including agriculture management specialists, supervise and coordinate the production, marketing, and purchasing and credit activities of one farm or a group of farms.

Places of Employment

Government agencies, colleges, and agricultural experiment stations hire many agricultural research workers. They also hire people to take technical and administrative responsibilities in programs involving or affecting farmers such as the production, processing, marketing, inspection, and grading of farm products; prevention and spread of plant pests, animal parasites, and diseases; and management and control of wildlife.

States, counties, and municipalities hire many who serve as vocational agriculture teachers. Through a nationwide, federally aided program, teachers of vocational agriculture not only teach high school students interested in farming, but also provide organized instruction for adult farmers, giving individual consultation at their farms to keep them abreast of modern farm technology.

Agribusinesses, farmer cooperatives, and commercial and financial companies that buy from, sell to, or serve farmers also employ many professionals with agriculture-related training, as do farmers' organizations or trade associations whose members deal with farmers. Such companies and organizations tend to be located either in industrial centers or in areas of high agricultural activity, and include producers of feed, seed, fertilizer, and farm equipment; and of insecticides, herbicides, and other chemical dusts and sprays. Employment in these organizations may be expected to expand, as farmers rely increasingly on them to provide farm supplies, machinery, equipment, and services, and to market farm products. The size of the organization and the types of services it offers determine the number of its employees and the nature of their jobs. Large farm supply cooperatives and businesses, for example, may have separate divisions for feed, seed, fertilizer, petroleum, chemicals, farm machinery, public relations, and credit, each supervised by a department head. In smaller businesses and cooperatives, such as local grain-marketing elevators, the business is run almost entirely by the general manager who has only two or three helpers.

Research activities related to agriculture have grown very rapidly. The largest agencies in this field are the State agricultural experiment stations connected with the land-grant colleges and the various research branches of the U.S. Department of Agriculture. The U.S. Department of Agriculture employs workers in research positions in various parts of the country: in Washington, D.C.; at the Agricultural Research Center at Beltsville, Md.; and at land-grant colleges. Other Government departments also have many agricultural research jobs.

Public and private lending institutions which make loans to farmers employ people with broad training in agriculture and business. These workers ordinarily are required to have had practical farm experience, as well as academic training in agriculture, economics, and other subjects. Making financially sound loans involves careful analysis of the farm business and proper evaluation of farm real estate and other farm property. These workers are employed by the Cooperative Farm Credit Administration in its banks and in associations operating under its supervision throughout the country; by the Farmers Home Administration in its Washington, D.C. office, and in State and county offices throughout the country; by rural banks; and by insurance companies that have substantial investments in farm mortgages.

Agricultural communications is another expanding area of specialization. Crop reporters and market news reporters are employed by the U.S. Department of Agriculture in field offices throughout the United States. Crop reporters gather information on crop production during all stages of the growing season. Market news reporters collect information on the movement of agricultural produce from the farm to the market. Radio and TV farm directors are employed by many radio and TV stations to report prices, sales, grades, and other agricultural information to farm residents. Agricultural reporters and editors compile farm news and data for farm journals, bulletins, and broadcasts.

The qualifications of workers in all of these fields ordinarily include a college education and special training in a particular line of work. In most of these fields, the demand for workers exceeds the supply. In recent years, the demand has increased because of the need to recruit professional personnel to staff agricultural missions to other countries and to give technical aid to agricultural institutions and farmers there.

Sources of Additional Information

Opportunities in Research. Additional information on research opportunities at land-grant colleges may be obtained from the dean of agriculture at the State land-grant

college. Information on employment in the U.S. Department of Agriculture is available from the USDA recruitment representatives at land-grant colleges and from the Office of Personnel, U.S. Department of Agriculture, Washington, D.C. 20250.

The following publication will be valuable:

Careers in Agriculture and Natural Resources—Agriculture. American Association of Land-Grant Colleges and State Universities, Washington, D.C. Copies can be obtained free from State agricultural colleges.

Opportunities in Agricultural Finance. For information about employment opportunities in agricultural finance, contact:

Farm Credit Administration, Washington, D.C. 20578

Farmers Home Administration, U.S. Department of Agriculture, Washington, D.C. 20250.

Agricultural Director, American Bankers Association, 90 Park Ave., New York, N.Y. 10016.

Opportunities with Cooperatives. Cooperatives in the individual communities are a good source of information on jobs either in their own organizations or in other cooperatives. Most States have a State Council or association of cooperatives that can provide information on cooperative locations and some job information.

The Cooperative Foundation, 59 E. Van Buren St., Chicago, Ill. 60605, offers a publication, *Careers in Cooperatives*, which describes about 100 different kinds of jobs available in these businesses.

Opportunities for Agricultural Economists. For additional information about opportunities in agricultural economics, write the Department of Agricultural Economics at State land-grant colleges. For information on Federal employment opportunities, applicants may get in touch with USDA recruitment representatives at the State land-grant college or write directly to the Office of Personnel, U.S. Department of Agriculture, Washington, D.C. 20250.

Opportunities as Vocational Agriculture Teachers. Prospective teachers should contact the Head Teacher Trainer in Agriculture Education at the land-grant college or the State Supervisor of Agricultural Education at the State Department of Public Instruction in their respective States.

CURRICULUM RESOURCES

There has been a recent surge of interest throughout the country in curriculum and instructional materials development. Many guides, course outlines, and other instructional materials have been and are in process of being developed.

SOURCES

The resources in this section have been collected from many sources, including professional organizations, state education departments, federal agencies, schools, curriculum clearinghouses, research organizations, the commercial market, and universities and colleges. The resources represent the most recent developmental efforts. They provide the classroom teacher with the capability of upgrading and restructuring the instructional program.

UPGRADING, RESTRUCTURING

PRICES

It should be noted that the indicated prices are as of 1979, and they most likely will increase in the coming years.

PRINTED AND NON-PRINT

The Curriculum Resources section is organized into two categories, printed materials (manuals, curriculum guides, LAP's, etc.) and non-print materials (films, filmstrips, slide sets and transparencies).

EIGHT SUBJECT AREAS

Each of these two categories is divided into eight subject area groupings. Listed below are the titles of the eight subject areas with accompanying sets of descriptors.

ANIMAL PRODUCTION: beef, dairy, horses, poultry, sheep and swine.

CROP PRODUCTION: fertilizing, planting, harvesting, pesticides and weed control.

AGRICULTURAL BUSINESS: sales, services, supplies, economics, management, marketing and processing.

AGRICULTURAL MECHANICS: tractor and equipment maintenance, tools, electricity, hydraulics, welding and safety.

HORTICULTURE: floriculture, landscaping, nursery and greenhouse management, ornamental horticulture, and turf management.

AGRICULTURAL RESOURCES: conservation, environmental protection, forestry, wildlife management and aquaculture.

AGRICULTURE CAREER EDUCATION

MISCELLANEOUS AGRICULTURE INFORMATION

PRINTED MATERIALS

The following section contains descriptions of a variety of printed instructional materials, including curriculum guides, course outlines, learning activity packages, task analyses, occupational inventories, student manuals, performance objectives, and tests. The materials can be obtained by writing to the publishers whose addresses appear in each resource listing.

ERIC

Some documents are available through the Educational Resources Information Center (ERIC), while others are available from The Vocational Education Center at The Ohio State University. ERIC publications are indicated by an ED number, while AIM/ARM publications from Ohio State are specified by a VT number. Both ERIC and AIM/ARM documents can be obtained either in a microfiche (film) or hard (paper) copy.

WMVRC

RCU

Educators in Maryland can also obtain many of these materials by contacting the Western Maryland Vocational Resource Center or Research Coordinating Unit (RCU) of the Maryland State Department of Education. The RCU can supply educators with free microfiche of any ERIC documents. See the Curriculum Support Services section in Common Core of Materials for Implementing Competency Based Vocational Education booklet for details.

Animal Production

ANIMAL BREEDING UNIT GUIDE

Instructional Materials Laboratory
10 Industrial Education Building
University of Missouri-Columbia
Columbia, MO 65211

The material is organized into five problem areas: how animals reproduce, how traits are inherited, heritability of traits, improving a swine herd genetically and improving a beef herd genetically. 1970.

Manual, 72 pp.	$3.00
Handouts, (Set of 18 pads)	$9.00
Transparencies (10) & 10 masters	$3.50

ANIMAL NUTRITION UNIT GUIDE

Instructional Materials Laboratory
10 Industrial Education Building
University of Missouri-Columbia
Columbia, MO 65211

The material is organized into five problem areas: introduction to animal nutrition; feed nutrients; digestion, absorption, metabolism; principles for determining nutrient requirements and balancing livestock. 1970.

Manual, 52 pp.	$1.50
Handouts (Set of 16 pads)	$8.00
Transparencies (2) & 2 masters	$ .70

ADVANCED (SEMESTER) BEEF PRODUCTION

Instructional Materials Laboratory
10 Industrial Education Building
University of Missouri-Columbia
Columbia, MO 65211

The materials have been organized into three units: cow and calf production; stocker and feeder cattle; and finishing cattle for market. 1971.

Manual	$6.00
Handouts (Complete set of 40)	$1.50
Transparencies (49)	$17.15

ADVANCED (SEMESTER) DAIRY PRODUCTION

Instructional Materials Laboratory
10 Industrial Education Building
University of Missouri-Columbia
Columbia, MO 65211

The materials have been organized into two units: raising dairy replacements and milk production. 1973.

Manual, 119 pp.	$4.00
Handouts (Sets of 12)	$ .65
Transparencies (28)	$9.80

ADVANCED (SEMESTER) SWINE PRODUCTION

Instructional Materials Laboratory
10 Industrial Education Building
University of Missouri-Columbia
Columbia, MO 65211

The materials have been organized into three units: feeder pig production; finishing market hogs; and producing breeding stock. 1971.

Manual, 165 pp.	$5.00
Handouts (Set of 29)	$ .70
Transparencies (60)	$21.00

BASIC PRINCIPLES OF ANIMAL SCIENCE; L. P. Jacks.

Curriculum Coordinating Unit
Mississippi State University
P. O. Drawer DX
Mississippi State, MS 39762

A reference unit intended to supplement instruction in such areas as: production enterprises, improvement projects, supervised experience programs, and the total program in general relating to animal science needs. Topics are: Anatomy and Physiology of Farm Animals, Nutrition, Environmental Factors that Affect Physiology, Diseases, and Parasites. High school level 9 - 12. 1965, 46 pp.

BEEF HANDBOOK

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

A practical and well-illustrated guide for any beef operation, this 63-page manual details all types of housing and equipment, and includes a wide variety of plans. Additional information explains rodent control, concrete mixes, weights and measures, and feed data.

Manual $2.00

DAIRY FARM WORKER

Vocational Instructional Services
F. E. Box 182
Texas A & M University
College Station, Texas 77843

Milk processing, sanitation, milk quality, care of dairy animals, and facility equipment. 62 topics.

Manual, 306 pp. $5.90

DAIRY HANDBOOK

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

This comprehensive 86-page handbook provides a wealth of information for students and teachers involved in dairy projects. Chapters deal with planning, the milking plant, ventilation, manure handling and more. Construction plans are included for a variety of feeding, fencing and handling facilities.

Manual, 86 pp. $3.00

EXPLORING SMALL ANIMAL CARE

New Jersey Vocational-Technical Curriculum Laboratory
Rutgers University
4103 Kilmer Campus
New Brunswick, New Jersey 08903

A teacher's guide designed for a six or seven-week exploratory program on careers in small animal care. It includes job outlook and opportunities in addition to units on basic skills, office techniques, kennel operations, animal handling and restraining, grooming and technical skills.

Manual $3.75

HORSE FARM EMPLOYEE

Vocational Instructional Services
F. E. Box 182
Texas A & M University
College Station, Texas 77843

Selecting of horses, horse farm management practices, buildings and equipment, and fitting, training, and showing horses. 89 topics.

Manual, 438 pp. $8.40

HORSE HANDBOOK

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

A well-planned and constructed facility makes horse care easier and more enjoyable. This 59-page, illustrated manual gives you all the basics of good stable management, with chapters on planning, housing, ventilation, construction, materials, building construction and a plans list. It's a thorough and helpful guide for students, teachers and all horse owners.

Manual $2.50

THE ILLUSTRATED GLOSSARY OF HORSE EQUIPMENT

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

The Glossary is one of the most complete handbooks of tack identification available, listing nearly 200 different pieces of equipment. It's especially useful for students and advisors in 4-H and FFA programs - anyone who rides a horse, for that matter.

Manual $2.95

INSECT, TICK, AND MITE PESTS OF LIVESTOCK AND PETS

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A description of each insect or pest includes the life stage, type metamorphosis, where each life stage will be found, the kind of damage done, and how serious the damage may be. 1972.

Student Manual $1.75

LIVESTOCK BREEDING

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

This student reference is designed to aid students' understanding of major concepts in livestock breeding. Problems and exercises are used to provide opportunities for students to apply the concepts in realistic situations. The book is well illustrated. Concepts general to all livestock breeding problems are considered as well as specific references to dairy, beef, swine, and sheep problems. 1977.

Student Manual $3.75
Transparency Masters $4.50
This series of 37 transparency masters is designed to accompany the book, Livestock Breeding. Master sheets are illustrated on one side and also include a description and page references to the book, Livestock Breeding.
Test Items $4.50
This publication consists of nearly 150 multiple choice items plus matching and true/false items which correlate with the information presented in the student manual, Livestock Breeding. They are organized into 13 groups of items corresponding to the 13 chapters in the student manual.

LIVESTOCK NUTRITION AND FEEDING

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A student manual which includes the following major topics: Livestock Digestive System, The Food Nutrients, Nutrient Requirements of Livestock, Selection of Feeds, and Selecting Feed Rations. The information features the why as well as the how of livestock nutrition and feeding. Also included are composition and nutrient requirement tables needed to formulate rations along with illustrations. 1978.

Student Manual, 177 pp. $3.75

LIVESTOCK SELECTION: GENERAL TERMS AND REASONS

Oklahoma Curriculum and Instructional Materials Center
Curriculum Coordinating Unit
P. O. Drawer DX
Mississippi State, MS 39762

Intended for students and teachers, this publication defines the general terms used in describing livestock and illustrates the giving of reasons in judging. Appropriate for grades 9 - 14. 1973, 20 pp.

POULTRY FARM WORKER-BROILER PRODUCTION

Vocational Instructional Services
F. E. Box 182
Texas A & M University
College Station, Texas 77843

Broiler production management, practices, and care and maintenance of mechanical equipment. (64 topics)

Manual, 285 pp. $5.50

POULTRY FARM WORKER - COMMERCIAL LAYING FLOCK

Vocational Instructional Services
F. E. Box 182
Texas A & M University
College Station, Texas 77843

Management practices, farm records, health, disease, parasite control, feeding, processing and marketing eggs. (79 topics)

Manual, 384 pp. $7.40

POULTRY HATCHERY EMPLOYEE

Vocational Instructional Services
F. E. Box 182
Texas A & M University
College Station, Texas 77843

Receiving, handling, and processing eggs, operation of systems controls, and care and management of chicks and poults. (24 topics)

Manual, 138 pp. $2.60

THE POULTRY INDUSTRY

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

Broad technological changes have revolutionized the poultry industry, and this full-color filmstrip explores modern methods, from automated egg breakers to punch card control of genetic selection. Career opportunities at all levels are highlighted as well, from production to research.

Silent filmstrip $9.00

POULTRY PROCESSING PLANT EMPLOYEE

Vocational Instructional Services
F. E. Box 182
Texas A & M University
College Station, Texas 77843

Inspection and grading, care and use of equipment, sanitation, processing, by-products utilization, distribution, and plant operation economics. (38 topics)

Manual, 161 pp. $3.15

RANCH EMPLOYEE

Vocational Instructional Services
F. E. Box 182
Texas A & M University
College Station, Texas 77843

Breeding herd management, ranch buildings and equipment, fitting and showing livestock, sanitation and health, and marketing livestock. (125 topics)

Manual, 509 pp. $9.60

SHEEP HANDBOOK

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

This comprehensive 80-page manual is a book that no one who works with sheep can afford to be without. It includes 39 pages of construction plans, complete with detailed drawings and materials lists. You'll also find 14 tables of technical data, such as silo capacities and pounds of feed consumed per feeding period.

Manual, 80 pp. $2.00

SWINE FARM EMPLOYEE

Vocational Instructional Services
F. E. Box 182
Texas A & M University
College Station, Texas 77843

Selecting, fitting and showing, breeding herd management, buildings and equipment, sanitation, and marketing. 77 topics.

Manual, 360 pp. $6.95

SWINE HANDBOOK

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

This popular handbook features 84 pages of text and extensive construction plans and illustrations, covering building systems, ventilation, waste management and equipment.

Each step, from layout selection to constructing fences and feeders, is detailed. It's a must for students with projects and for teachers who need help setting up a swine operation on the school farm.

Manual, 84 pp. $2.00

SWINE UNIT GUIDE

Instructional Materials Laboratory
10 Industrial Education Building
University of Missouri-Columbia
Columbia, MO 65211

The material is organized into six problem areas: selecting and purchasing breeding and feeding swine; managing swine during breeding and gestation; managing and caring for the sow and litter; growing, finishing and marketing swine; controlling diseases and parasites; and providing housing and equipment for swine. 1970.

Manual, 80 pp. $3.00
Handouts (Set of 18 pads) $9.00
Transparencies
(34) and 34 masters $11.90

VETERINARY ASSISTANT

Vocational Instructional Services
P. E. Box 182
Texas A & M University
College Station, Texas 77843

Animal disease control, restraining animals, nutrition, kennel and cage management, and laboratory and clinical procedures. 91 topics.

Manual, 435 pp. $8.40

WOOL & MOHAIR WAREHOUSE EMPLOYEE

Vocational Instructional Services
P. E. Box 182
Texas A & M University
College Station, Texas 77843

Management of herds, structure and properties of wool and mohair, warehouse organization and functions, processing, and marketing. 55 topics.

Manual, 263 pp. $5.05

WORKING IN ANIMAL SCIENCE, P. Peterson, A. C. Christensen, E. A. Nelson.

Gregg/McGraw-Hill
1221 Avenue of the Americas
New York, New York 10020

This text introduces students to the knowledge and skills of selection, breeding, reproduction, nutrition, and sanitation and disease controls. The concepts are introduced in terms of animal science, management skills and are then applied to various species of large and small animals. Farmers, ranchers, and agribusiness employers are shown managing an animal enterprise. Skills are placed in the context of job requirements for production agriculture as well as agribusiness (marketing and processing of animal products).

Text, 208 pp. $6.00
Activity Guide $3.60
Transparency Masters $7.00
Teacher's Manual & Key $3.70
Set Package $70.50
5 texts, 5 activity guides, 1 set transparency masters, 1 teacher's manual and key, and 1 sound filmstrip.

Crop Production

ADVANCED (SEMESTER) CORN AND SORGHUM PRODUCTION

Instructional Materials Laboratory
10 Industrial Education Building
University of Missouri-Columbia
Columbia, MO 65211

The materials have been organized into 12 problem areas: economic considerations in corn production; climatic, soil and equipment needs for producing corn; selection of seed corn; fertilization of corn; soil preparation and planting corn; cultivation and chemical weed control; control of insects and diseases; irrigation and plant growth; harvesting and storing corn as grain or silage; marketing corn; growing grain sorghums and growing forage sorghums for silage and pasture. 1973.

Manual, 281 pp.	$6.00
Handouts (Set of 53)	$2.00
Transparencies (33)	$11.55
35mm Color Slides, with Script	$28.25

No-Till Corn Production For Conservation Farming: Ill. of developments in no-till farming that are keyed to the CORN AND SORGHUM PRODUCTION unit.

ADVANCED (SEMESTER) FORAGE UNIT

Instructional Materials Laboratory
10 Industrial Education Building
University of Missouri-Columbia
Columbia, MO 65211

The Forage Unit has been developed to be used in the course, Advanced Crop Production and Marketing. The materials are divided into 12 lessons: importance of forages; important forage plants; selecting forage crops for new pastures; establishing new permanent pastures; establishing sudangrass and sorghum-sudan hybrid pastures; renovation of old pastures; planning a pasture utilization system; planning a twelve-month forage system; managing existing pasture stands; harvesting and storing hay; making haylage and silage, forage seed production. 1977.

Manual, 180 pp.	$6.50
Handouts (Set of 27)	$1.50
Transparencies (51)	$17.85

ADVANCED (SEMESTER) SOYBEAN PRODUCTION

Instructional Materials Laboratory
10 Industrial Education Building
University of Missouri-Columbia
Columbia, MO. 65211

The materials have been organized into nine problem areas: uses and economic trends for soybeans; resources and growing conditions necessary to produce soybeans; selection of soybean seed; fertilizer for soybeans; planting procedure and seeding rate; control of weeds, insects and diseases; providing additional water for soybeans; harvesting and storing soybeans and marketing soybeans. 1973.

Manual, 177 pp.	$4.50
Handouts (Set of 23)	$1.50
Transparencies (24)	$8.40

AGRICULTURAL CHEMICAL SAFETY

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

The proper use and handling of agricultural chemicals is the topic of this two-part learning kit, which includes: a 96-page teacher's handbook with detailed background information, teaching plan, fact sheets on common pesticides, and much more; and a set of 21 overhead transparency masters designed to accompany the teacher's manual.

Manual, 96 pp.	$4.00
Transparency Masters	$2.50

AGRICULTURAL CROPS: EXERCISES IN BIOLOGICAL PRINCIPLES

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

This practical laboratory manual, although designed primarily for teachers, is a useful tool for students as well. The application of basic biological principles to agricultural practices in raising crops is demonstrated in 24 experiments. Each exercise is carefully structured to move from theory to application, with study questions following for a helpful recap. Plastic-bound to lay open and flat for lab work.

Manual $3.50

BALER OPERATION, SERVICE AND MAINTENANCE

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A student manual extensively illustrated with pictures and drawings which deals with the design, adjustment, operation, and maintenance of the baler. It is intended to be used in conjunction with balers and operating manuals available in the school shop or in the field. 1977.

Student Manual, 58 pp. $2.75

BASIC PRINCIPLES OF PLANT SCIENCE,
L. P. Jacks

Mississippi State Board for Vocational Education
Curriculum Coordinating Unit
Mississippi State University
Mississippi State, MS 39762

A reference unit intended to supplement instruction on production enterprises, improvement projects, supervised experience programs, and the total program in general relating to plant science needs. Topics are: classification of agricultural plants, parts of plants, reproduction, growth, nutrition, diseases, insects, and weed science. High school level 1964, 80 pp.

COMBINE HARVESTING

John Deere Distribution Service Center
Department FF/TIE
1400-3rd Avenue
Moline, Illinois 61265

- Tells how combines work—using full-color cutaways.
- Gives complete story on basic functions such as cutting, feeding, and threshing.
- Explains propulsion systems, hydraulics, electrical systems, controls, cabs, and special equipment.
- Shows how to adjust for field operation in each crop, each field condition.
- Has photos of field problems—down crops, lodged grain, etc.
- Extra chapters on maintenance and safety.
- Gives complete troubleshooting charts.

Text, 196 pp. $6.95
360 illustrations, 60 in full process color, 8 1/2 X 11-inch size with soft cover.
Slide Set $80.00
Contains: 200 slides in 35mm color in standard 2 X 2-inch frames.
Instructor's Kit $15.95
Contains: Three-ring binder, eight units, each with teaching guide, test and answers, laboratory exercises, study and discussion activities, transparency masters and script, plus copy of student's text.

COMBINES AND COMBINING

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

This student manual is extensively illustrated with line drawings, charts, graphs, and pictures. The subject matter is divided into the following areas: What is the Value of Doing a Good Job of Combining, The Basic Design of the Combine, The Operation of the Combine, and The Economics of Owning a Combine. (Revised 1970)

Student Manual $2.75
Mimeograph $ .25
A suggested mimeograph examination consisting of 50 objective questions that may be used with the publication, Combines and Combining.
Slides and Script $8.60
Script Only $ .75
A series of 39 color slides and ill. script. The slide series is designed to accompany the manual, Combines and Combining. The design of the combine and the principles of operation are illustrated. (Revised 1968).

CORN PICKERS AND PICKING CORN

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A student manual extensively illustrated with pictures, drawings, and graphs. The subject matter is divided into the following areas: The Value of Doing a Good Job of Picking Corn, The Basic Design of the Corn Picker, Operation of the Corn Picker, Economics of Corn Picker Ownership, and Safety Tips. 1970.

Student Manual, 127 pp. $3.00

COTTON GINNING EMPLOYEE

Vocational Instructional Services
F. E. Box 182
Texas A & M University
College Station, Texas 77843

Ginning equipment, processing, plant management and maintenance, and cotton classing and marketing.

Book, 314 pp. $6.05

CROP CHEMICALS

John Deere Distribution Service Center
Department FF/TIE
1400-3rd Avenue
Moline, Illinois 61265

- Practical guide to application of agricultural chemicals for better crop yields and for weed, pest, and insect control.
- Explains each type of crop chemical, its purpose and proper use.
- Identifies common weeds, insects, and diseases which threaten farm and ranch crops.
- Explains selecting and using the best methods of applying chemicals.
- Explains types of fertilizers and their uses.
- Discusses weed control methods and selection of herbicides.
- Discusses plant disease control and diagnosis of plant diseases.
- Tells how to identify types of insects.
- Covers insect control and types of insecticides.
- Explains fumigation, where and why it is used.
- Shows how to use equipment to apply crop chemicals safely and efficiently.

Text, 230 pp. $7.95
302 illustrations with nearly 100 full process color, 400 pest identification photos in full color, 8 1/2 X 11-inch size in soft cover.
Slide Set $80.00
Contains: 200 slides in 35 mm color in standard 2 X 2-inch frames.
Instructor's Kit $16.95
Contains: Three-ring binder, ten units, each with teaching guide, test and answers, laboratory exercises, study and discussion activities, tranparency masters and script, plus copy of student's text.

CROP FARM EMPLOYEE

Vocational Instructional Services
F. E. Box 182
Texas A & M University
College Station, Texas 77843

Crop selection, farm machinery maintenance and operation, land preparation, fertilizers, crop irrigation, weed and pest control, and farm records.

Book, 655 pp. $12.60

FIELD CROP DISEASES

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyfee Road
Columbia, Ohio 43210

A student manual dealing with plant diseases that present problems to crop farmers of the Midwest. It is designed to assist the student in identifying plant diseases and, when diseases occur, to determine the appropriate action to take. The major headings are as follows: Causes and Symptoms of Diseases, Prevention and Control of Diseases, Corn Diseases, Soybean Diseases, Small Grain Diseases, and Forage Crop Diseases. The manual is illustrated with photographs and drawings showing the characteristics of each disease, 1973.

Student Manual, 78 pp. $2.35

FIELD CROP NUTRITION

Instructional Materials Laboratory
10 Industrial Education Building
University of Missouri-Columbia
Columbia, MO 65211

A student manual designed to accompany PLANT AND DEVELOPMENT assists students in determining kind and amount of nutrients required for efficient field crop production. Major problem areas included are: determining nutrient needs; selection of fertilizer and lime; diagnosing nutrient shortages; and application of fertilizer and lime. Practical exercises included assist students in management decisions related to efficient fertility of field crops. 1977.

Student Manual, 130 pp. $4.00

HAY AND FORAGE HARVESTING

John Deere Distribution Service Center
Department FF/TIE
1400-3rd Avenue
Moline, Illinois 61265

- Discusses purposes and uses of different types of hay and forage equipment.
- Gives theory of operation for each type of machine using many colorful illustrations.
- Covers all types-mowers, conditioners, rakes, balers, handling systems, cubers, choppers, blowers, and forage harvesters.
- Explains new large-package hay handling systems.
- Explains proper operation and field adjustments.
- Shows correct steps in maintenance, storage, and troubleshooting.
- Explains and promotes better understanding of fundamentals by operators.

Text, 344 pp. $8.95
over 500 illustrations with more than 160 in full process color, 8 1/2 X 11-inch size with soft cover.
Slide Set $88.00
Contains: 220 slides in 35mm color in standard 2 X 2-inch frames.
Instructor's Kit $18.95
Contains: Three-ring binder, fifteen units, each with teaching guide, test and answers, laboratory exercises, study and discussion activities, transparency masters and script, plus copy of student's text.

INDIVIDUAL STUDY GUIDE FOR DRYING CORN ON THE FARM

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A student manual dealing with the following 3 types of corn drying: heated forced air, natural forced air, and natural drying in storage. The manual is well illustrated with pictures, drawings, and graphs.

Student Manual $3.75

INSECT IDENTIFICATION MANUAL

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

More than 50 different insects are illustrated and described in this 125 page handbook on harmful and beneficial insects. Also included are an extensive bibliography, suggestions for carrying out classroom work in insect identification and control, and safety precautions for pesticide use.

Manual, 125 pp. $5.75

INSECT PESTS OF FIELD CROPS AND STORED GRAINS

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

Provides descriptions, identification aids, survey methods, and controls for harmful insects. The life stages of the insect are studied and the most appropriate stages at which to apply control measures are considered. The kind and extent of damage is considered. 1972.

Student Manual, 112 pp. $3.25

PLANT GROWTH AND DEVELOPMENT

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A student manual developed for use by students of vocational agriculture who are studying plant growth and development processes related to field crop production. Special emphasis is given to the seed-producing crops, such as corn, soybeans, and small grains. The plant growth processes described are: seed germination, seedling growth, absorption, photosynthesis, respiration, transpiration, and reproduction. The conditions affecting the above mentioned processes are: water, sunlight, air, and temperature. The purpose of this manual is to describe conditions affecting or influencing crop growth and development processes. The student is guided in applying this knowledge to making management decisions in the following areas: seed selection, planting practices, tillage practices, fertility practices, and pest control. Suggested student activities and exercises are provided. 1976.

Student Manual, 148 pp. $3.75
Teacher's Guide, 61 pp. $4.00
This guide provides suggestions for teaching the unit, suggested solutions to the exercises presented in the student manual, and suggested test items and answers, 1977.
Transparency Manters (55) $3.00
A group of 55 transparency masters illustrations are keyed to the information presented in the student manual.

PLANT SCIENCE

Instructional Materials Laboratory
10 Industrial Education Building
University of Missouri-Columbia
Columbia, MO 65211

An up-to-date self-instructional course in PLANT SCIENCE. The material is designed for college level teaching; however, this would make an excellent reference guide for teaching and developing lesson plans in PLANT SCIENCE.

Resource Guide $7.75

PLANT SCIENCE UNIT

Instructional Materials Laboratory
10 Instructional Education Building
University of Missouri-Columbia
Columbia, MO 65211

The Plant Science Unit is for the Plant Science Core Curriculum. The materials include 2 handouts and 19 transparency masters as well as suggestions for demonstrations. The unit was prepared using references and instructional materials available in most departments. 1976 edition.

Manual, 85 pp. $4.00
Transparency Masters (19) $6.65

PLANTING

John Deere Distribution Service Center
Department FF/TIE
1400-3rd Avenue
Moline, Illinois 61265

- Tells how planters work—using many color cutaways.
- Discusses various planting methods and why each is used.
- Discusses seed germination, plant emergence and plant development.
- Gives complete story on basic functions, such as metering devices, seed covering mechanisms, and seedbed firming components.
- Discusses types of drives and seedbed firming components.
- Shows how to adjust for field operation and how to calibrate the planter.
- Has complete chapter on grain drills and broadcast seeders.
- Gives full coverage of specialized planters — potato, vegetable, and transplanters.
- Has sections on maintenance and safety.
- Gives complete troubleshooting charts.

Text, 172 pp. $6.95
286 illustrations.
Slide Set $64.00
Contains: 160 slides in 35mm color in standard 2 X 2 inch frames.
Instructor's Kit $15.95
Contains: Three-ring binder, six units, each with teaching guide, test and answer keys, laboratory exercises, study and discussion activities, transparency masters and script, plus copy of student's text.

PLOWS AND PLOWING

Ohio Agricultural Education Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A manual structured for student use which is extensively illustrated and includes the following sections: What Is a Good Job of Plowing? Design of the Plow Bottom, Maintenance of the Moldboard Plow, Forces Acting Upon the Moldboard Plow, Principles of Hitching the Tractor, Hitching the Drawn Plow, Hitching the Integral-Mounted and Semi-Integral-Mounted Plow, Adjusting Attachments for Efficient Operation, and Field Adjusting the Plow, 1969.

Student Manual, 124 pp. $3.00
Transparency Masters (39) $2.25
A series of 39 transparency masters which may be used to prepare transparencies for overhead projection. The master sheets have an illustration on one side and a description and page reference to the book on the other. (1971)

PRINCIPLES OF PESTICIDE USE, HANDLING, AND APPLICATION

Oklahoma State Department Vocational and Technical Education Curriculum and Instructional Materials Center,
1515 West, Sixth Avenue
Stillwater, OK 74074

Training package designed to present basic principles of pesticide use, handling, and application. Included is information on federal laws and regulations, personal safety, environmental implications, storage and disposal considerations, proper application procedures, and fundamentals of pest management.

Teacher's Guide $9.00
Student Manual $3.50

A REFERENCE ON VEGETABLE PRODUCTION

Mississippi State University
Agricultural Education Department
Curriculum Coordinating Unit
Mississippi State, MS 30762

Teacher's guide presents a comprehensive view of vegetable production. Topics include: determining production possibilities, selecting varieties, securing seed, selecting soil, planting, tilling, fertilizing, controlling weeds, controlling diseases, controlling insects, mulching, rotating and harvesting. For use with

students through high school level, junior college and adult. 1969, 70 pp.

A REFERENCE FOR LIMING SOILS FOR GREATER PROFIT, L. P. Jacks and T. E. Ellis.

Mississippi State University
Agricultural Education Department
Curriculum Coordinating Unit
Mississippi State, MS. 39762

This unit is intended to provide the teacher with basic knowledge needed for teaching wise use of lime in the soil-fertility program. The instructional content is presented in a question-and-answer form. Topics include: why lime; need determination; sources of lime; how much; when; how to apply; how often; and assistance programs. Appropriate 9th grade through junior college. 1967, 25 pp.

SEED PRODUCTION OF CORN, SOYBEANS, AND SMALL GRAINS

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A student study manual which considers the importance of the seed industry, losses from using poor seed, how plants produce seeds, crop varieties, production of certified seed, and seed laws. (Revised 1977).

Student Manual, 76 pp.	$2.50
Slides and Script	$15.40
Script Only	$ .50

A series of 70 color slides and ill. script designed to accompany the student reference of the same title.

SMALL GRAINS UNIT

Instructional Materials Laboratory
10 Industrial Education Building
University of Missouri-Columbia
Columbia, MO 65211

The Small Grains Unit for the Plant Science Curriculum contains handouts and transparency masters as well as suggestions for demonstrations. The six lessons include the following information: adaptation and uses; selection; establishing a small grain stand; controlling insects; controlling diseases; harvesting and storing. 1977 edition.

Manual, 139 pp.	$4.50
Handouts (Set of 16)	$1.00
Transparencies (Set of 13)	$4.55

TILLAGE

John Deere Distribution Service Center
Department FF/TIE
1400 - 3rd Avenue
Moline, Illinois 61265

- Discusses basic purposes of tillage.
- Tells how tillage equipment works using cutaway pictures.
- Gives complete story on basic functions, such as primary tillage, secondary tillage, weed control.
- Covers minimum tillage and other new methods.
- Shows how to adjust for various field operations and conditions.
- Tells how to correct improper adjustments.
- Discusses traction, flotation, and compaction of soil.
- Has sections on maintenance and safety.
- Gives complete troubleshooting charts.

Text, 380 pp.	$8.95
617 illustrations.	
Slide Set	$88.00
220 2 X 2 inch slides in 35mm color	
Instructor's Kit	$18.95

Contains: Three-ring binder, nineteen units, each with teaching guide, test and answers, laboratory exercises, study and discussion activities, transparency masters and script, plus copy of student's text.

TILLAGE SYSTEMS

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A student manual which guides the student to determine the most appropriate tillage system to use in his or her given situation. Some factors considered are: type of soil to be tilled, availability and costs of the various pieces of equipment required for the different tillage systems, time available for the tillage operation, and timeliness of the planting operation. The text is supplemented with tables containing economic information and pictures illustrating the various pieces of tillage equipment. (1974).

Student Manual, 55 pp. $2.00

WEED CONTROL, CULTURAL AND CHEMICAL

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A student manual dealing with the control of weeds in farm crops. The economic importance of weed control is considered. Principles and concepts of weed control are presented with practical application for farm situations. (1978).

Student Manual, 108 pp. $2.75
Transparency Masters $3.25
Series of 46 transparency masters from which transparencies may be prepared for use with the overhead projector. Master sheets with the illustration on one side and a description and page reference to the book are included with the set. (1970).

WORKING IN PLANT SCIENCE, D. D. Bishop, S. R. Chapman, L. P. Carter.

Gregg/McGraw Hill
1221 Avenue of the Americas
New York, New York 10020

This text introduces students to the basic principles of plant growth and development in relation to modern agricultural techniques. With this text, students build a foundation of fundamental knowledge about plant growth and classification, soils, crops, and range management. 1978.

Text, 208 pp. $6.00
Activity Guide $3.60
Transparency Masters $7.00
Teacher's Manual & Key $3.70
Set Package $70.50
(5 texts, 5 activity guides, 1 set transparency masters, 1 teacher's manual and key, and 1 sound filmstrip.)

ADVERTISING AND PROMOTION OF AGRICULTURAL PRODUCTS

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A student manual covering the following areas: The Importance of Selling and Moving Products; The Importance of Good Will; The Four Points of Good Advertising; The Use of Newspapers, Radio, Direct Mail, Television, Magazines; and Position Advertising; Writing Good Advertising; Displaying of Products; and Scheduling and Budgeting Advertising. (1976)

Student Manual, 44 pp. $ .95

AGRIBUSINESS

Instructional Materials Laboratory
10 Industrial Education Building
University of Missouri-Columbia
Columbia, MO. 65211

This instructor's guide is divided into seven units: careers in agribusiness; human relations in business; selling and salesmanship; advertising and promotion; marketing agricultural products; business procedures and records; business and money management; also included are two appendices, 35 handouts and 21 transparency masters. 1975 edition.

Guide, 233 pp. $8.00

AGRICULTURAL BUSINESS MONEY MANAGEMENT

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A student manual covering the following areas: Taxes Assessed in Business, Insurances Used in Business, and Credit and Interest. (1976)

Student Manual, 73 pp. $1.20

AGRICULTURAL BUSINESS PROCEDURES AND RECORDS

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A student manual covering the following areas: Billing Merchandise, Preparing Sales Tickets, Handling Cash and Checks, Determining Service Charges, Replacing Inventory and Depreciation, and Dealing with Losses. (1976)

Student Manual, 103 pp. $1.50
Teacher Guide $5.00
A teacher supplement which contains a brief description of the agricultural business supply and service program. It also provides suggestions as to how the 7 previously listed manuals may be used. Answers to the subjective-type questions are given with suggestions as to how some of the problems may be worked. Suggested test items are also included along with suggested answers. (1976)
Transparency Masters $4.50
Transparency masters of many forms, student exercises, and illustrations that have been enlarged. (1976)

AGRICULTURAL BUSINESS SUPPLY AND SERVICE

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A series of 7 student manuals designed for the agricultural business supply and service student. The student manuals are designed to provide the student with basic information needed in all of the agricultural businesses. Provision is made for the student to work out practical exercises in conjunction with his or her occupational experience program. Each student in the class should have his or her own copy of the student manual. (Revised 1976)

Set of Student Manuals, 517 pp. $8.00

AGRICULTURAL CHEMICAL SALES & SERVICER

Vocational Instructional Services
F. E. Box 182
Texas A & M University
College Station, Texas 77843

Chemicals used as insecticides, herbicides, fungicides, bactericides, nematocides and rodenticides, and regulators. 66 topics.

Manual, 635 pp. $12.20

AGRICULTURAL MANAGEMENT AND ECONOMICS

Instructional Materials Laboratory
10 Industrial Education Building
University of Missouri-Columbia
Columbia, MO. 65211

An instructor's guide which includes units on profit maximizing principles, farm planning and business management for teaching farm management and economics to high school students and young/adult farmers. Includes suggested course layout, teaching calendar lesson plans, transparency masters, handouts, etc. 1976 edition.

Guide, 540 pp. $10.00
Handouts $4.25
258 pages of handouts for the above. 1976 edition.
Transparencies and Masters (27) $9.45

AGRICULTURAL PRODUCTION AND BUSINESS MANAGEMENT

Vocational Education Media Center
10 Tillman Hall
Clemson University
Clemson, South Carolina 29631

This curriculum guide was developed for and with agricultural teachers for students of vocational agriculture planning to make production agriculture a career. The units of instruction include behaviorally stated objectives, suggested learning activities, a topic outline, and suggested resources. Units included are: orientation, farm management, agricultural mechanics, cash crop production, agricultural construction, pasture establishment and management, dairy production beef production, swine produciton, and poultry production.

Curriculum Guide $7.50

AGRICULTURAL SALES AND SERVICES

Instructional Materials Laboratory
10 Industrial Education Building
University of Missouri-Columbia
Columbia, MO. 65211

This guide includes seven areas: careers in sales and services; human relations; selling and salesmanship; advertising and promotion; marketing agricultural products; agribusiness procedures and records; and agribusiness and money management. Each unit includes behavioral objectives, suggested activities for teacher and students, information sheets, assignment sheets, visual aids, tests and answers to tests. 1976 edition.

Guide $5.00
Student Materials $3.00
Student materials for the above guide. 1976 edition.

BUILDING MATERIALS

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

This student manual is developed for the agricultural business service student who will be working with the sale of the various materials used in the maintenance and construction of buildings. 1976.

Student Manual, 75 pp. $2.75

BUSINESS PRACTICES FOR AGRICULTURAL MACHINERY DEALERS

Ohio Agricultural Education
Curriculum Materials Service
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A series of four manuals designed for the student who works in one or more of the following three phases of the agricultural machinery dealership: parts, service, and sales. The student materials are organized to provide information concerning business practices and to provide exercises to enable the student to experience how the various procedures are carried out. The materials should be used in conjunction with the student's placement in a machinery dealership. The student materials are divided into four parts: General Information; Part One, Parts Department; Part Two, Shop Service; Part Three, Equipment Sales. Each student should have a complete set. A teacher supplement has been prepared which provides suggested answers to the student exercises presented in the parts department manual, the shop service manual, and the sales manual. 1979.

DUMORE FARM RECORDS PROBLEM

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

Your students will find the DuMore workbook simplifies recordkeeping. Taxation, depreciation and other complex problems are explained, and ledger sheets are included so students can learn the proper form for each type of entry.

Workbook $2.60

FARM BUSINESS PLANNING AND ANALYSIS

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A series of 41 teaching units gathered into a 3-year program with the following phases: Phase I (14 units) - Keeping Complete Farm Business Accounts; Phase II (15 units) - Summary and Analysis of Farm Business Records; Phase III (12 units) - Planning and Reorganization of the Farm Business; Introduction to the Farm Business Planning and Analysis Program and Teaching Units (10 pages). The materials are designed primarily for teacher use with farmers enrolled in the FBPA program, although they may be adapted for use in high school farm management courses. 1976.

Teacher Guide, 364 pp. $14.00
Transparency Masters $1.00
A series of 12 transparencies masters from which transparencies may be made. A description is printed on the backs of those illustrations needing additional explanation. 1971.

FARM RECORDS——A MANAGEMENT TOOL

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

This publication is designed for the vocational agriculture teacher and extension personnel in teaching farm business records and accounting. The content is built around the Ohio

Commercial Farm Account Book (which may be purchased from: Farm Management Specialist, Cooperative Extension Service, Room 234, 2120 Fyffe Road, The Ohio State University, Columbia, Ohio 43210). However, the accounting principles used in the publication, Farm Records - A Management Tool, would have application to other record keeping systems. 1976.

Student Manual $3.50

FEEDLOT EMPLOYEE

Vocational Instructional Services
F. E. Box 182
Texas A & M University
College Station, Texas 77843

Purchasing livestock, animal health and nutrition, marketing livestock, and care and maintenance of equipment and facilities. 85 topics.

Manual, 467 pp. $8.95

FEEDS

Ohio Agricultural Education
Curriculum Materials Service
Ohio State Uinversity
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A student manual prepared for the agricultural business and service student who is working in a place of business that prepares and sells feed to livestock producers. The manual provides knowledge about feeds, suggestions for assisting customers, preparation and mixing of feeds, and legal requirements. Practical exercises are provided for the student with suggested solutions given in a teacher's guide.

Student Manual, 81 pp.
Teacher Guide 22 pp.

FEED SALES & SERVICER

Vocational Instructional Services
F. E. Box 182
Texas A & M University
College Station, texas 77843

Animal nutrition, feed preparation, business organization, procedures, service functions, related supplies and equipment, and salesmanship. 94 topics.

Manual, 436 pp. $8.15

FERTILIZER SALES & SERVICER

Vocational Instructional Services
F. E. Box 182
Texas A & M University
College Station, Texas 77843

Soil problems, fertilizer nutrients and application, plant food elements, and regulations and controls. 66 topics.

Manual, 339 pp. $6.50

GOOD FARM ACCOUNTS

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State Uinversity
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

Farm accounting data of a case dairy farm is used to teach correct accounting procedures. Detailed step-by-step information and examples are provided for current expenses, receipts, inventory, and depreciation entries. Students make entries, summarize data, work net worth problems and cash flow sheets. A correlated teacher's guide is available.

Student Manual

Teacher's Guide
A teacher's guide correlated to the student manual suggests teaching time, strategies, related information, and materials. Contains masters for

making overhead projection transparencies, and answer key to completed accounted book entries for case farm example.

GRAIN MARKETING

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A student manual developed to assist students in making and implementing important decisions involving marketing their grain. It is intended that the manual be used as a reference and a workbook. It should also aid teachers in conducting grain marketing classes with young and adult farmers. 1977.

Student Manual, 72 pp. $2.80
Teacher Supplement, 32 pp. $3.50
A teacher guide designed to supplement the student manual with the same title. Suggestions for teaching are provided, including a field trip guide. Sample test items with suggested answers provided. Suggested solutions to problems presented in the student manual are given. 1977.

A GUIDE FOR PLANNING POST-SECONDARY PROGRAMS FOR AGRIBUSINESS, NATURAL RESOURCES, AND ENVIRONMENTAL PROTECTION OCCUPATIONS, Gary F. Beasley,

Research and Curriculum Unit
Drawer DX
Mississippi State University
Mississippi State, MS 39762

This publication is intended to assist teachers, counselors, and administrators in planning, administering and conducting post-secondary programs for agribusiness, natural resources, and enviromental protection occupations. The publication is directed to persons responsible for planning new programs as well as modifying existing programs. 1973.

A GUIDE FOR TEACHING AGRICULTURAL PRODUCTS, A. E. Eichellerger, et al

Curriculum Coordinating Unit
P. O. Drawer DX
Mississippi State, MS 39762

Contains an outline for suggested instruction in agricultural products, examples of student activities, and recommended references. 1972, 36 pp.

A GUIDE FOR TEACHING AGRICULTURAL SUPPLIES/SERVICES, Jasper S. Lee, et al.

Curriculum Coordinating Unit
P. O. Drawer DX
Mississippi State, MS 39762

Contains an outline of suggested instruction in agricultural resources, examples of student activities, and recommended references. 1972, 31 pp.

HUMAN RELATIONS IN AGRICULTRUAL BUSINESS

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A student manual covers the following areas: Why the Employee Should be Concerned with Human Relations, The Factors Making Up Personality, Rating and Improving One's Personality, Improving Human Relations In Business, and An Overall Rating in Human Relations. 1976 .

Student Manual, 79 pp. $1.25

IRRIGATION EQUIPMENT SALES & SERVICER

Vocational Instructional Services
F. E. Box 182
Texas A & M University
College Station, Texas 77843

Irrigation needs, equipment, servicing and maintenance of systems, and water management. 58 topics.

Manual, 379 pp. $7.30

THE LAW AND YOU

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

Contains 11 parts as follows: The Sources of Law, The Courts, Legal Procedures, Criminal Law, Torts, Contracts, Business Transactions, Real Property Law, Probate Law, Family Law, and a Glossary of Terms.

Student Manual $1.00

MARKETING AGRICULTURAL PRODUCTS

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A student manual covering the following areas: The Importance of Marketing, The Relationship Between Production and Marketing, The Definition of Marketing, Marketing Functions and Channels, Associating, Marketing Functions with Job Titles, Markets and Prices, Marketing of Grain, Transportation, Marketing of Livestock, Marketing Dairy Products, and Marketing Poultry Products. 1976.

Student Manual, 103 pp. $1.50

MEAT PROCESSING PLANT EMPLOYEE

Vocational Instructional Services
F. E. Box 182
Texas A & M University
College Station, Texas 77843

Quality of meat, carcass classification and grading, meat fabrication, dressing poultry, meat by-products, and marketing. 70 topics.

Manual, 322 pp. $6.20

MILK PROCESSING PLANT EMPLOYEE

Vocational Instructional Services
F. E. Box 182
Texas A & M University
College Station, Texas 77843

Milk quality, microbiology and sanitation, milk processing equipment, by-products, and plant equipment operation and maintenance. 84 topics.

Manual, 329 pp. $6.35

OFFICE PROCEDURES USED IN THE AGRICULTURAL SERVICES

A combined text and workbook designed for the student who is working as an office clerk in an agricultural business. It deals with the record keeping of the business.

Student Manual $1.60
Test & Answer Supplement $3.25

PRINCIPLES OF AGRICULTURAL MANAGEMENT DECISION MAKING

Instructional Materials Laboratory
10 Industrial Education Building
University of Missouri-Columbia
Columbia, MO 65211

This unit is organized into seven problem areas and provides guidelines for the selection of subject matter and techniques that could be presented as a unit in farm management. Accompanying the unit are 31 transparency masters and 30 handouts for students. 1972 edition.

Guide, 80 pp. $2.50
Transparencies (31) $10.85

PROFIT MAXIMIZING PRINCIPLES

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

Six profit-maximizing principles are included in this teacher's guide. In

studying the illustrations, the students should achieve an understanding of the principles and their applications to decision making. The study should strengthen the student's managerial ability so that he will know why as well as how and what. (1970)

Student manual, 127 pp. $2.50

REFERENCE MATERIALS AND PERIODICALS IN ECONOMICS: AGRICULTURE, Emma Lila Fundaburk

Scarecrow Press, Inc.
52 Liberty Street
P. O. Box 656
Metuchen, New Jersey 08840

This volume lists more than 4800 titles dealing with agriculture and is organized into four parts. Part I lists bibliographies, abstracts, digests, indexes and catalogues; Part II covers dictionaries, directories, encyclopedias, almanacs, atlases and biographies; Part III contains such diverse informational media as handbooks, manuals, guides, yearbooks and annuals; and Part IV covers periodicals. Five indexes - a subject index, author and publisher index, place of publication index, date of publication, and an index of abbreviated titles - provide access to the sources of information contained in this volume.

Book, 595 pp. $17.00

SEED SALES & SERVICER

Vocational Instructional Services
P. E. Box 182
Texas A & M University
College Station, Texas 77843

Seed production, quality control, warehouse management, plant equipment operation, and selecting adapted varieties. 97 topics.

Manual, 561 pp. $9.25

SELLING AND SALESMANSHIP FOR AGRICULTURAL PRODUCTS

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A student manual covering the following areas: The Selling of Agricultural Products, Kinds of Selling, Satisfying Customer Needs, Selling as a Career, Developing A Good Sales Personality, Product Knowledge, Interest and Aptitude in Selling, Knowledge of Product or Service, Transacting Sales, Kinds of Customers, Parts of the Sales Transaction, Making Sales Presentations, and Evaluating Sales Presentations. 1976.

Student Manual, 47 pp. $ .95

A STUDY TO DETERMINE COMPETENCIES NEEDED BY EMPLOYEES ENTERING THE GRAIN, FEED AND SEED BUSINESS, A. W. Donahoo, M. L. Amberson, D. Bishop.

Montana State University
Department of Agricultural and Industrial Education
Bozeman, Montana

Knowledge and skills needed by agricultural workers in the grain, feed and seed industry. August 1972, 85 pp.

A TEACHER'S GUIDE TO FARM MONEY MANAGEMENT

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

This loose-leaf guide was developed to assist teachers of vocational agriculture in teaching young and adult farmers as well as high school farm management classes. The lessons are as follows: The Need for Capital in the Farm Business, Preparation and Analysis of a Net Worth Statement, and Developing a Farm Financial Plan. 1972.

Teacher Guide, 79 pp. $2.50.

AGRICULTURAL ELECTRICITY-ELECTRIC CONTROLS

Vocational Education Media Center
10 Tillman Hall
Clemson University
Clemson, SC 29631

A set of materials consisting of (1) teacher manual which lists references, suggested teaching activities and student exercises with worksheets and solutions (2) student manual which covers basic concepts of electric controls and (3) a set of 15 overhead transparencies covering such information as switch wiring symbols, thermostats, relay systems, photo-electric cells, switches and time controls.

Complete Set	$7.00
Teacher Guide, 45 pp.	$4.00
Student Manual, 13 pp.	$1.00
Transparencies	$3.00

AGRICULTURAL ELECTRICITY-ELECTRIC MOTORS

Vocational Education Media Center
10 Tillman Hall
Clemson University
Clemson, SC 29631

This set of materials consists of a teacher manual which lists references, suggested teaching activities, student exercises and worksheets with solutions, a student manual which covers basic concepts concerning electric motors, and a set of 23 overhead transparencies covering such topics as basic concepts, parts of electric motors and types of electric motors.

Complete set	$8.00
Teacher Guide	$2.50
Student Manual	$1.00
Transparencies	$5.25

AGRICULTURAL MACHINERY MECHANICS HELPER-POWER BOOK

Vocational Instructional Services
F. E. Box 182
Texas A & M University
College Station, Texas 77843

Internal combustion, lubricants, fuel systems, cooling systems, electrical systems, engine testing and tune-up, power trains, and hydraulics. 48 topics.

Book, 513 pp. $9.85

ARICULTURAL MACHINERY REPAIRER-EQUIPMENT BOOK

Vocational Instructional Services
F. E. Box 182
Texas A & M University
College Station, Texas 77843

Tillage, planting, cultivating and weed control equipment, sprayers and dusters, fertilizer distributors, and harvesting and specialized equipment. 62 topics.

Book, 383 pp. $7.30

AGRICULTURAL MACHINERY SAFETY

John Deere Distribution Service Center
Department FF/TIE
1400 - 3rd Avenue
Moline, Illinois 61265

- Starts with the basic human factors in farm and ranch machine safety.
- Tells how to recognize potential hazards and understand what causes them.
- Is written simply for easy comprehension.
- Illustrates all major points using colorful diagrams and photos.
- Broadens the concept of machine safety by using a positive, but in-depth approach.
- Widely useful for teaching safe machine operation to farm and ranch youth and adult classes.

Text, 334 pp. $7.95
560 illustrations
Slide Set $96.00
Contains: 240 slides in 35mm color in standard 2 X 2 inch frames.
Instructor's Kit $17.95
Contains: Three-ring binder, twelve units, each with teaching guide, test and answers, laboratory exercises, study and discussion activities, transparency masters and script, plus copy of student's text.

AGRICULTURAL MACHINERY SERVICE & REPAIR

Vocational Instructional Services
F. E. Box 182
Texas A & M University
College Station, Texas 77843

Technical information on service and repair of power machinery and farm equipment. 54 topics.

Text, 325 pp. $14.40
Transparencies (185) $46.25

AGRICULTURAL MECHANICS

Vocational Education Media Center
10 Tillman Hall
Clemson University
Clemson, SC 29631

This guide provides objectives, suggested learning activities, topic and selected references for teaching twenty-eight instructional units in the area of agricultural mechanics.

Curriculum Guide $5.00

AGRICULTURAL MECHANICS: A COURSE OF STUDY

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

This vital handbook for vocational agriculture teachers is a master guide for teachers wishing to establish or modernize shop classes. The 164 pages explore a wide range of topics, including valuable lists of equipment and supplies recommended for agricultural mechanics courses and practical classroom activities.

Book, 164 pp. $5.50

AGRICULTURAL WIRING HANDBOOK

Instructional Materials Laboratory
10 Industrial Education Building
University of Missouri-Columbia
Columbia, MO 65211

This is a book on how to plan farm wiring. Contains recommendations and suggestions for sizes of conductors, number and location of outlets, controls and similar factors. The major sections are: interior wiring design of agricultural buildings; electrical distribution; timely topics. 1976 edition.

Handbook, 81 pp. $2.50

AGRICULTURAL MECHANICS

Curriculum and Instructional Materials Center
State Department of Vocational-Technical Education
1515 West Sixth
Stillwater, OK 74074

Units of instruction have been developed for specialized agricultural mechanics classes of the eleventh and twelfth grades. Areas included in the manual are orientation and general safety; agricultural mechanics skills; agricultural power and machinery; agricultural electrical power and processes; agricultural structures; and soil and water management.

AGRICULTURAL MECHANICS INSTRUCTION IN SECONDARY SCHOOLS, G. G. Powell, Jr. and G. M. Walker

Curriculum Coordinating Unit
Drawer DX
Mississippi State Univeristy
Mississippi State, MS 39762

Planning guide for teachers. Describes approach to teaching agricultural mechanics utilizing laboratory-work areas. The laboratory organization, tool layout and a listing of tools are included. Revised 1973, 50 pp.

AGRICULTURE SHOP SAFETY

Instructional Materials Laboratory
10 Industrial Education Building
University of Missouri-Columbia
Columbia, MO 65211

Instructor's manual to supplement the student manual. Safety is an essential element in the shop. Fire safety, electrical safety, the use of specific clothing and first aid are considered. Safety precautions needed in the use of hand tools and power tools are thoroughly covered. 1969 edition.

Instructor's Manual, 41 pp.	$2.50
Student Materials, 61 pp.	$2.50
Transparencies (62)	$11.50

AIR CONDITIONING

John Deere Distribuiton Service Center
Department FF/TIE
1400 - 3rd Avenue
Moline, Illinois 61265

- Covers all types of modern systems for automotive and off-the-road machinery.
- Starts with the basic principles of heat and matter and builds up step-by-step.
- Tells how each system component works.
- Explains use of various kinds of equipment to service air-conditioning systems.
- Tells how to visually inspect, diagnose, and test the system.

Text, 108 pp.	$4.15
Slide Set	$21.95

Contains: 60 slides in 35mm color in standard 2 X 2 inch frames.

ARC WELDING

Instructional Materials Laboratory
10 Industrial Education Building
University of Missouri-Columbia
Columbia, MO 65211

This instructor's guide is based upon the textbook by Parker, Lincoln Electric materials and keyed to the 3M visual packet 3V. Included are teaching plans, demonstrations, shop exercises, transparency masters and handouts. 1974 edition.

Instructor's Guide, 107 pp.	$3.00
Handouts (25)	$ .55
Transparencies (39)	$13.65

BALL AND ROLLER BEARINGS

AAVIM
Engineering Center
Athens, Georgia 30602

To help the student become familiar with ball and roller bearings and the importance of proper care and maintenance. Includes the following: Types of bearings, uses, capacities, removal, inspection, lubrication, installation, and adjustment.

Booklet, 32 pp.	$1.25

80 illustrations.

BASIC ARC WELDING SKILLS. AGRICULTURAL MECHANICS JOB SHEETS, Layle D. Lawrence

West Virginia University
College of Agriculture & Forestry
Division of Resource Management
Morgantown, West Virginia

Job sheets place step-by-step "how-to" information into the hands of the student so that he can develop proficiency at his own pace. 1973, 31 pp.

BASIC ELECTRICITY

Instructional Materials Laboratory
10 Industrial Education Building
University of Missouri-Columbia
Columbia, MO 65211

This instructor's guide contains five units of instruction covering such areas as: fundamentals of electricity; safety; basic wiring practices; planning and wiring layouts; electric motors. 1977 edition.

Instructor's Guide, 189 pp. $3.00
Student Materials $2.00

BASIC HYDRAULICS

Instructional Materials Laboratory
10 Industrial Education Building
University of Missouri-Columbia
Columbia, MO 65211

This instructor's guide is based on the John Deere FOS Manual and slides. Includes 14 teaching plans, 31 transparency masters and handouts. 1973 edition.

Instructor's Guide, 62 pp. $2.30
Transparencies $10.85

BEARINGS AND SEALS

John Deere Distribution Service Center
Department FF/TIE
1400 - 3rd Avenue
Moline, Illinois 61265

- Covers all types of bearings and seals - fully illustrated.
- Explains bearing loads, friction, "crush," and other concepts.
- Tells the complete maintenance story on bearings - cleaning, lubrication, adjustment, and repair.
- Explains the uses of gaskets, oil seals, sealing rings, and others.
- Tells how to care for seals—both static and dynamic types.

Text, 86 pp. $3.25
136 illustrations
Slide Set $44.95
Contains: 125 slides in 35mm color in standard 2 X 2 inch frames.

BELTS AND CHAINS

John Deere Distribution Service Center
Department FF/TIE
1400 - 3rd Avenue
Moline, Illinois 61265

- Starts with basic theory and operation of belt and chain drives.
- Gives complete stories on all types of belts - V-belts, banded-V, linked-V, V-ribbed, timing belts, flat belts, and others.
- Explains complete maintenance of belt drives - everything from belt slip to sheave wear.
- Tells about all kinds of chains - roller, rollerless, silent, detached-link, block, pintle, and others.
- Covers maintenance and adjustment of chain drives.
- Gives photo examples of failures for both belts and chains.

Text, 56 pp. $2.75
86 illustrations
Slide Set $29.65
Contains: 80 slides in 35mm color in standard 2 X 2 inch frames.

BUILDING FENCES

AAVIM
Engineering Center
Athens, Georgia 30602

Anyone who expects to build a fence or to supervise the buildng of a fence must be proficient in the skills described in this book. Each step is illustrated so that the student can perform the various tasks with a minimum of assistance from the teacher. Procedures are given for building the following fences: barbed wire, woven wire, electric, cable, welded panel, wood rail, chain link.

Book, 96 pp. $3.95
250 illustrations

CARE AND OPERATION OF SMALL ENGINES VOLUME I

Instructional Materials Laboratory
10 Industrial Education Building
University of Missouri-Columbia
Columbia, MO 65211

Gives step-by-step procedures stressing safety precautions on basic principles and how to service and/or adjust the following: fuel system,

air cleaners, carburetors, batteries, starters, spark plugs and crankcase breathers. 1979 edition.

Book, 150 pp.	$5.25
Student Workbook	
Instructor's Key	

CHAIN SAW SERVICE MANUAL

Instructional Materials Laboratory
10 Industrial Education Building
University of Missouri-Columbia
Columbia, MO 65211

This manual will answer most of your chain saw service and maintenance problems. It covers engine fundamentals, service, adjustment and disassembly procedures for 32 makes and models of chain saws.

Manual, 304 pp.	$7.50

COMPREHENSIVE SMALL ENGINE REPAIR

Instructional Materials Laboratory
10 Industrial Education Building
University of Missouri-Columbia
Columbia, MO 65211

These materials provide the basic information needed to repair any 2 or 4 stroke cycle gasoline engine. In addition to the orientation materials, which include safety, tools and measuring, units have been written for basic small engine theory, electrical systems and engine service. 1977 edition.

Book, 900 pp.	$10.00
Student Material	$6.00
Transparencies (128)	$31.00

CONCRETE AND CONCRETE MASONRY

Instructional Materials Laboratory
10 Industrial Education Building
University of Missouri-Columbia
Columbia, MO 65211

This manual includes subject matter on: properties of concrete, portland cement, selection of materials, designing the mix, yields and mix corrections, tools and equipment, mixing concrete, site preparation and forming, placing and reinforcing concrete, finishing and curing, casting quality concrete, admixtures and masonry construction. Includes over 100 illustrations. 1976 edition.

Manual, 128 pp.	$4.75

DETERMINING WEIGHT AND COST OF STRUCTURAL STEEL. A PROGRAMMED INSTRUCTION UNIT, Layle D. Lawrence

College of Agriculture and Forestry
Division of Resource Management
Agricultural Education
West Virginia University
Morgantown, West Virginia

A programmed instruction unit to be used in learning a method of determining weights of structural steel components by use of simple formulas. Tenth grade level. 1974, 13 pp.

DEVELOPING SHOP SAFETY SKILLS

Instructional Materials Laboratory
10 Industrial Education Building
University of Missouri-Columbia
Columbia, MO 65211

A basic reference and text providing instructional programs in the use of tools, machinery and equipment. Includes: developing a concern for safety; preparing for safety before entering the shop or work area; preparing for safety on entering the shop or work area; preparing for safety at work station; practicing safety at the work station; practicing for safety on leaving the shop or work area. 1978 edition.

Manual, 100 pp.	$3.75
Instructor's Booklet	$1.50
Student Workbook	$1.50
Audio Visual Kit	$67.50

Contains 140 35mm slides and text, teacher guide, student workbook, and cassette tape.

DIESEL ENGINE MECHANICS

Instructional Materials Laboratory
10 Industrial Education Building
University of Missouri-Columbia
Columbia, MO 65211

Units of instruction have been written for career orientation, principles of engine operation, repair and overhaul of major engine components, auxiliary systems, diesel fuel systems, electrical systems, measuring engine performance, and cutting and welding. 1977 edition.

Book, 845 pp.	$25.00
Student Materials	$15.00
Transparencies (235)	$51.00

ELECTRICAL SYSTEMS

John Deere Distribution Service Center
Department FF/TIE
1400 - 3rd Avenue
Moline, Illinois 61265

- Starts with the basic theory using simple diagrams in color.
- Compares the many types of circuits and components.
- Covers both generators and alternators plus the new transistorized regulators.
- Tells how to maintain the circuits for safety and long service.
- Gives the whole story on trouble-shooting and testing.
- Defines the various electrical terms and symbols.
- Has spot tests at the end of each chapter.

Text, 236 pp. 428 illustrations.	$6.85
Slide Set	$98.75
Contains: 295 slides in 35mm color in standard 2 X 2 inch frames.	
Transparency Masters	$21.00
Contains: 190 masters on heavy 8 1/2 X 11 sheets. Black and white, with folder.	

ELECTRICITY AND ELECTRICAL WIRING

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A series of 4 manuals focusing on how to select materials, to install simple circuits, and to plan for efficient and safe use of electricity.

I.	Electrical Power: Its Importance and Measurement (51 pp)	$1.35
II.	Circuit Anatomy (76 pp)	$2.00
III.	Conductors, Insulation, and Their Use (60 pp)	$1.60
IV.	Distribution of Electricity on Home and Farm (51 pp)	$1.35

DEMONSTRATIONS AND RELATED INFORMATION FOR TEACHING ELECTRICITY AND ELECTRICAL WIRING

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

This manual contains 16 teacher demonstrations covering such areas as: How Circuits Function, Grounding and Polarizing Circuits, Voltage Drop, and Three-Wire Service. A list of materials and construction details are included for building new demonstration equipment or altering older equipment. This manual is a companion to the 4 student manuals by the same name and contains transparency masters, student test questions, and lists of related audio-visual material to be used in teaching electrical wiring. 1975.

Teacher Guide, 124 pp.	$3.85

ENGINES

John Deere Distribution Service Center
Department FF/TIE
1400 - 3rd Avenue
Moline, Illinois 61265

- Begins with basic theory of engines-2 and 4 cycles.
- Covers all engine systems-fuel (3 types); intake and exhaust; lubrication, cooling, and governing.
- Shows all test equipment and service tools needed for engines.
- Gives the whole story on engine diagnosis and testing.
- Has a complete tune-up chapter.
- Shows actual photos of failed parts.
- Extra features - spot tests, glossary.

Text, 300 pp. $7.45
496 illustrations
Slide Set $99.75
Contains: 300 slides in 35mm color in standard 2 X 2 inch frames.
Transparency Masters $22.00
Contains: 200 masters on heavy 8 1/2 X 11 sheets. Black and white, with folder.

FARM ARC WELDING PROCEDURES

Vocational Instructional Services
F. E. Box 182
College Station, Texas 77843

This is a teaching guide for arc welding on the farm. 1973

Teacher's Guide, 49 pp. $1.00

FARM TRACTOR TUNE-UP AND SERVICE SPECIFICATIONS

AAVIM
Engineering Center
Athens, Georgia 30602

A wealth of specific information from the manufacturers of tractors. Specification charts for tune-up and lubrication for each model of farm tractor built since 1948. Provides adjustment, tune-up and service data for the following makes: Allis-Chalmers, J. I. Case, John Deere, Ford, White Oliver, International Harvester, Massey-Ferguson, Minneaplis-Moline, David Brown, New Idea.

Booklet, 39 pp. $4.95

FASTENERS

John Deere Distribution Service Center
Department FF/TIE
1400 - 3rd Avenue
Moline, Illinois 61265

- All types of mechanical fasteners now covered in one practical guide.
- Complete story on each type--bolts, cap screws, nuts, screws, studs, pins, rivets, sealants, specialty fasteners, and many more.
- Emphasis is on purpose, design, use, removal, installation, and proper tightening.
- Whole chapter on torque and tension of fasteners.

Text, 70 pp. $3.25
176 illustrations.
Slide Set $47.15
Contains: 130 slides in 35mm color in standard 2 X 2 inch frames.

FIBER GLASS/PLASTICS

John Deere Distribution Service Center
Department FF/TIE
1400 - 3rd Avenue
Moline, Illinois 61265

- Concise guide to repair of fiber glass damage.
- Starts with nature of fiber glass, types of damage, tools for repair.
- Detailed step-by-step procedures for repair of cosmetic damage as well as structural damage - hairline cracks, fractures, punctures.
- Over 80 photos show actual repair steps and use of kits and materials.

Text, 32 pp. $2.35
83 illustrations.
Slide Set $29.65
Contains: 80 slides in 35mm color in standard 2 X 2 inch frames.

FUELS, LUBRICANTS, AND COOLANTS

John Deere Distribution Service Center
Department FF/TIE
1400 - 3rd Avenue
Moline, Illinois 61265

- Explains all three types of modern engine fuels—gasoline, LP-Gas, and Diesel.
- Tells how to select fuels based on octane ratings, cetane ratings, additives.
- Covers all modern lubricants—additivies, ratings, and classifications, including new API ratings.

Text, 72 pp. $3.25
76 illustrations
Slide Set $21.95
Contains: 60 slides in 35mm color in standard 2 X 2 inch frames.

GENERAL AGRICULTURAL MECHANICS, VOLUMES I AND II

Vocational Instructional Services
F. E. Box 182
Texas A & M University
College Station, Texas 77843

Technical information includes power machinery, farm equipment, welding, cold metal, safety, small engines, painting, farm structures, electricity, plumbing, soil and water management, and surveying. 65 topics.

Manual, 550 pp. $24.00
Transparencies (342) $85.50

A GUIDE FOR TEACHING AGRICULTURAL MECHANICS, Ronald A. Brown, et al.

Curriculum Coordinating Unit
P. O. Drawer DX
Mississippi State, MS 39762

Contains an outline of suggested instruction in agricultural mechanics, recommended references, and examples of student activities. Eleventh and twelfth grade level. 1972, 38 pp.

HOW TO READ SHOP DRAWINGS

The Lincoln Electric Co.
22801 St. Clair Avenue
Cleveland, Ohio 44117

This booklet is concerned with the application of AWS welding symbols as used on shop drawings.

Booklet, 187 pp. $2.50

HYDRAULICS

John Deere Distribution Service Center
Department FF/TIE
1400 - 3rd Avenue
Moline, Illinois 61265

- Covers the field of modern hydraulics-both open- and closed-center.
- Starts with the basic theory and builds up knowledge.
- Compares the various types of hydraulic pumps, valves, cylinders, and motors.
- Gives valuable tips on maintenance and safety for hydraulic machines.
- Tells how to troubleshoot and locate failures.
- Defines the many terms and symbols used in hydraulics today.
- Has spot tests at the end of each chapter.

Text, 172 pp. $5.75
276 illustrations
Slide Set $69.35
Contains: 200 slides in 35mm color in standard 2 X 2 inch frames.
Transparency Masters $16.50
Contains: 150 masters on heavy 8 1/2 X 11 sheets. Black and white, with folder.

HYDRAULICS FOR TRACTORS AND OTHER MOBILE EQUIPMENT, VOLUME 1 CARE AND OPERATION

AAVIM
Engineering Center
Athens, Georgia 30602

Developed to help the student become competent in the service skills needed by the tractor and equipment operator. The manual is not intended, however, to teach operating tractors and equipment. This publication includes: basic principles, operating systems, servicing systems, troubleshooting. 1974.

Manual, 64 pp. $3.95
101 illustrations.

HYDRAULICS FOR TRACTORS AND OTHER MOBILE EQUIPMENT, VOLUME II INSPECTING AND TESTING

AAVIM
Engineering Center
Athens, Georgia 30602

Prerequisite for training students who expect to do the operation. Maintenance repair of hydraulic systems. Procedures are not given for repair jobs, however. Describes and illustrates the functions of various component parts of hydraulic systems. Principles and procedures are given for the following: reservoirs and coolers, lines and fittings, cylinders, pumps, valves, accumulators, motors, and troubleshooting.

Manual, 72 pp. $4.95
137 illustrations.

INTERNAL COMBUSTION ENGINE

Instructional Materials Laboratory
10 Industrial Education Building
Univeristy of Missouri-Columbia
Columbia, MO 65211

This instructor's guide is based on the Briggs and Stratton Corporation instructional materials and engines. Included is a complete overhaul tool list, procedure for the 6 and 8 cubic inch Briggs and Stratton engines, 15 teaching plans for 90 days or periods of instruction. 1970 edition.

Teacher's Guide, 107 pp. $3.50

JOB OPERATION SHEETS: TRACTORS, Gary, F. Beasley and G. M. Walker

Curriculum Coordinating Unit
Research and Curriculum Unit
Drawer DX
Mississippi State University
Mississippi State, MS 39762

This is a supplementary reference for teachers and students. These job operation sheets on tractors were developed to assist teachers in improving instruction for skill development, to provide a quick reference for reviewing maintenance procedures, and to provide students with a guide to use in performing operations in step-by-step procedures in skill development. Grades 9 - 14. 1973.

JOB OR SKILL WORKSHEETS

The Pennsylvania State University
Department of Agricultural Education
University Park, Pennsylvania 16802

Worksheets cover sharpening, cleaning and servicing a wide variety of agricultural tools. Individual student wiring board, plumbing exercises for pipe fitting; repair and starting stand for vertical shaft engine, momentum wheel for operating a vertical shaft engine on a starting wheel are provided. 1974.

Single Sheets @ $.05 each; Pads of 25 sheets @ $.50 each.

LEARNING ACTIVITY PAC

Department of Public Instruction
Bureau for Career and Manpower Development
Madison Wisconsin
Vocatinal Education Pilot Program Workshop
University of Wisconsin
Platteville, Wisconsin

1. Hydraulics
2. World of Work - Part II

LAP units include: introduction, learning objectives, pre-assessment, pre-assessment answer sheet, lessons (components, objectives, instruction, learning activities, self evaluation).

MACHINERY MANAGEMENT

John Deere Distribution Service Center
Department FF/TIE
1400 - 3rd Avenue
Moline, Illinois 61265

- Practical guide to basics of machinery management for all modern farming and ranching operations.
- Discusses problems of machinery management for operator and options available to him.

- Helps operators understand how to accurately measure machine capacity and match equipment.
- Offers suggestions on improving field efficiency and time factors.
- Demonstrates how to accurately estimate costs of owning and operating farm machinery.
- Tells how to match power units to the size and type of farm or ranch.
- Gives a guide on deciding when to trade in machines.
- Compares advantages of owning or leasing machinery, versus hiring custom operators.
- Puts all factors together to demonstrate long-range machinery planning.

Text, 160 pp. $6.95
220 illustrations.
Slide Set $76.00
Contains: 190 2 X 2 inch slides in 35mm color.
Instructor's Kit $16.95
Contains: Three-ring binder, twelve units, each with teaching guide, test and answers, laboratory exercises, study and discussion activities, transparency masters and script, plus copy of student's text.

MOWING AND SPRAYING EQUIPMENT

John Deere Distribution Service Center
Department FF/TIE
1400 - 3rd Avenue
Moline, Illinois 61265

- Focuses on moving cutterbars and spraying nozzles.
- Gives the complete story on the operation, care, and repair of mowing cutterbars.
- Tells how to adjust knife register, replace sections, sharpen knives.
- Explains flow rates, atomization, and spray patterns.
- Shows how to calibrate the application rate for various nozzles.

Text, 38 pp. $2.35
85 illustrations
Slide Set $27.45
Contains: 75 slides in 35mm color in standard 2 X 2 inch frames.

NEW LESSONS IN ARC WELDING

The Lincoln Electric Co.
22801 St. Clair Avenue
Cleveland, Ohio 44117

This publication covers manipulatory techniques, electrode and machine characteristics.

Manual, 320 pp. $2.00

OPERATING THE KNUCKLE BOOM LOADER

Vocational Education Media Center
10 Tillman Hall
Clemson University
Clemson, SC 29631

A student training manual and instructor's training guide to help the student through a step-by-step procedure in developing not only manual dexterity with loader controls, but a knowledge of loading techniques, hydraulic principles, and safety on or around a loader. Inserted are additional Loader Operation Exercises for the student.

Manual $2.25

OUTDOOR LIVING, PLANNING AND CONSTRUCTION GUIDE

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

This thorough, 52 page illustrated manual will help students plan and build all types of outdoor living areas. Chapter headings include: Surfacing Materials, Facilities, Recreation and Construction. Detailed plans for fences, patio furniture, planters and play equipment and more complete this useful guide.

Manual, 52 pp. $2.00

OXY-ACETYLENE WELDING

Instructional Materials Laboratory
10 Industrial Education Building
University of Missouri-Columbia
Columbia, MO 65211

This instructor's guide is based upon the Linde textbook and keyed to the 3M visual packet 2V. It includes: teaching plans, shop demonstrations, shop exercises, transparency masters and handouts. 1974 edition.

Instructor's Guide, 97 pp	$3.00
Handouts (18)	$ .40
Transparencies (53)	$18.55

PLANNING FARM FENCES

AAVIM
Engineering Center
Athens, Georgia 30602

To lead the student in making decisions prerequisite to building fences. Prepares him for selecting the following with regard to fencing: location and arrangement, type of fence, quality of materials, end and corners, posts, passageways.

Manual, 56 pp. 130 illustrations	$2.25

PLANNING MACHINERY PROTECTION

AAVIM
Engineering Center
Athens, Georgia 30602

This publication describes the different methods of protecting tractors and equipment. It gives the effectiveness of each method and its cost. Includes: causes of depreciation, means of protection, space requirements, management practices, types of storage, costs.

Manual, 40 pp. 60 illustrations	$2.25

POWER TOOL SAFETY AND OPERATION

Instructional Materials Laboratory
10 Industrial Education Building
University of Missouri-Columbia
Columbia, MO 65211

The packet includes: one student manual, suggested teacher and student activities for 24 power tools, 24 safety exams, and 24 transparency masters for part identification of the power tools. 1973 edition.

Packet, 96 pp.	$7.50
Transparency Masters (24)	$3.00
Student Materials	$3.90

POWER TRAINS

John Deere Distribution Service Center
Department FF/TIE
1400 - 3rd Avenue
Moline, Illinois 61265

- Tells how the basic power trains work—gear, friction, and fluid types.
- Defines the basic types of gears and gear failures using illustrations.
- Covers backlash, endplay, and preload adjustments.
- Gives the complete story on six basic types of clutches.
- Has a complete story on modern hydrostatic drives and torque converters.
- Covers all types of gear transmissions.
- Tells how to troubleshoot and locate failures.
- Has spot tests, glossary, pictures of failed parts.

Text, 156 pp. 212 illustrations	$5.75
Slide Set Contains: 195 slides in 35mm color in standard 2 X 2 inch frames.	$67.25
Transparency Masters Contains: 130 masters on heavy 8 1/2 X 11 sheets. Black and white, with folder.	$14.50

PREVENTIVE MAINTENANCE

John Deere Distribution Service Center
Department FF/TIE
1400 - 3rd Avenue
Moline, Illinois 61265

- Covers all types of engine-powered equipment——tractors, combines, forage harvesters, and more.
- Has a complete maintenance story for each engine systems as well as power trains, hydraulics, cabs, and accessories.
- Tells why preventive maintenance must be performed, and shows step-by-step how to do it.

- Gives details on daily, weekly, and other maintenance jobs, plus extra chapters on tune-ups, trouble-shooting, and storage.
- Uses colorful diagrams to give theory of operation as introduction to maintenance of each system.
- Shows use of basic test equipment needed by the modern operator.
- Broadens the concept of preventive maintenance by using a modern, in-depth approach to farm machines.

Text, 238 pp. 407 illustrations	$7.95
Slide Set Contains: 240 slides in 35mm color in standard 2 X 2 inch frames.	$96.00
Instructor's Kit Contains: Three-ring binder, twelve units, each with teaching guide, test and answers, laboratory exercises, study and discussion activities, transparency masters and script, plus copy of student's text.	$17.95

THE PROCEDURE HANDBOOK OF ARC WELDING

The Lincoln Electric Co.
22801 St. Clair Avenue
Cleveland, Ohio 44117

This handbook defines and explains procedures followed in arc welding.

Handbook, 750 pp.	$5.00

RESIDENTIAL WIRING

Instructional Materials Laboratory
10 Industrial Education Building
University of Missouri-Columbia
Columbia, MO 65211

This manual contains 28 units of instruction to help develop the skills needed for employment in the residential wiring field. It contains information on all facets of the occupation from orientation, through equipment and wiring practices, to customer service and applying for a job. 1978 edition.

Manual	$10.00
Student Materials	$6.50
Transparencies	$21.00

SAFE OPERATION OF AGRICULTURAL EQUIPMENT

Instructional Materials Laboratory
10 Industrial Education Building
Univeristy of Missouri-Columbia
Columbia, MO 65211

This subject matter manual includes 10 units covering instruments and controls, maintenance, safety checks, starting and stopping tractors, tractor and machinery safety on farm and road, tractor hitches and PTO, why accidents occur, accident situations and safety standards. Each unit ends with a worksheet and safety checksheet. 1976 edition.

Student Manual, 107 pp.	$2.75
Instructor's Manual	$2.60

SELECTED REFERENCES AND AIDS FOR TEACHING AGRICULTURAL MECHANICS TO STUDENTS OF AGRICULTURE EDUCATION

Agriculture Education
Virginia Polytechnic Institute and State University
Blacksburg, VA 24061

This resource unit contains references available to the teacher and student of agricultural mechanics. Listings are separated into commercial or industrial publications, audio-visual aids, textbooks and bulletins in the areas of: Agricultural Power, Drawing, Construction and Maintenance, Electricity, Water Management, Soil and Water Conservation. 51 pp.

SELECTING AND MAINTAINING FIELD MOWERS

AAVIM
Engineering Center
Athens, Georgia 30602

A complete text on the selection and maintenance of cutterbar and rotary mowers. Helps a student become proficient in doing the following jobs: selecting a mower, sharpening knives, repairing universal joints, checking

safety release mechanisms, adjusting drives such as V-belt, roller chain, gear and reciprocating.

Book, 128 pp. $4.25
300 illustrations.

SHOP TOOLS

John Deere Distribution Service Center
Department FF/TIE
1400 - 3rd Avenue
Moline, Illinois 61265

- Shows basic use of hand tools.
- Gives shortcuts and safety rules for performing shop work.
- Tells how to use special tools such as torque wrenches and micrometers.
- Includes handy tables of frequently used weights and measures.
- Tells how to care for tools.
- Has fastener torque guide for various types of fasteners.
- Tells how to sharpen drills and chisels.
- Explains how to keep tools in good shape.

Text, 36 pp. $2.35
84 illustrations
Slide Set $16.45
Contains: 45 slides in 35mm color in standard 2 X 2 inch frames.

SMALL ENGINE SERVICE MANUAL

Instructional Materials Laboratory
10 Industrial Education Building
University of Missouri-Columbia
Columbia, MO 65211

This manual covers the service, adjustment and disassembly procedures for 26 makes of two- and four-stroke cycle engines. 1975 edition.

Manual, 304 pp. $7.50

SMALL GASOLINE ENGINES

Instructional Materials Laboratory
10 Industrial Education Building
University of Missouri-Columbia
Columbia, MO 65211

The manual contains over 100 illustrations, including: two- and four-stroke cycle engine operation, compression systems, measuring devices, carburetion systems, ignition systems, starting systems and maintenance and trouble-shooting. Includes classroom and laboratory exercises for each chapter. 1973 edition.

Manual, 80 pp. $3.85
Handouts (set of 20 pads) $18.00

SMALL GASOLINE ENGINES

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

This helpful laboratory guide for teachers includes a series of lesson plans for lab exercises totaling 20 hours. Each plan is complete with tool and equipment lists, teaching aids and explanations of student requirements and procedures. All steps in dismantling and repairing small engines are demonstrated with emphasis on equipment used in ornamental horticulture.

Manual $1.80

SMALL GASOLINE ENGINES

Instructional Materials Laboratory
10 Industrial Education Building
Univeristy of Missouri-Colmubia
Columbia, MO 65211

This individual study guide has been designed as a learning aid for students engaged in work involving small gasoline engines. 1975 edition.

Study Guide, 125 pp. $5.00
Key, 21 pp. $2.00

SMALL GASOLINE ENGINES——FLOAT-TYPE CARBURETOR REPAIR

Vocational Education Media Center
10 Tillman Hall
Clemson University
Clemson, SC 29631

A companion manual to the Small Engines-Ignition System Repair concerning the fundamentals of the float-type carburetor system and related parts. Utilizing the individualized instruction manual, the students are able to move at their own pace while the teacher is free to circulate among the students and give individual help as the need arises.

Student Manual $1.50

SMALL GASOLINE ENGINES-IGNITION SYSTEM REPAIR

Vocational Education Media Center
10 Tillman Hall
Clemson University
Clemson, S.C. 29631

Something every student in Small Gasoline Engines should have. An individualized student instruction manual designed to be used beside a small gasoline engine while a student learns the fundamentals of the ignition system and related parts. This allows students to move at their own pace while the teacher is free to circulate among the students and give individual help as the need arises. This publication has been tested and has been found exceptionally good for a wide variety of student ability levels.

Student Manual $1.50

SMALL TRACTOR MANUAL I

Instructional Materials Laboratory
10 Industrial Education Building
Univeristy of Missouri-Columbia
Columbia, MO. 65211

Covers the following air-cooled engine makes with less than 14 Hp: Allis Chalmers, AMF, Ariens, Bolens, J.I. Case, John Deere, Engr. Products, Ford, Gibson, Gravely and Homelite. 1975 edition.

Manual, 260 pp. $5.75

SMALL TRACTOR MANUAL II

Instructional Materials Laboratory
10 Industrial Education Building
University of Missouri-Columbia
Columbia, MO 65211

Covers air-cooled engine makes with less than 14 Hp: International Harvester, Jacobsen, MTD, Massey-Ferguson, Minneapolis Moline, Pennsylvania, Simplicity, Western Auto, Wheel Horse, White and Yard Man. 1975 edition.

Manual, 272 pp. $5.75

A STUDY TO DETERMINE COMPETENCIES NEEDED BY EMPLOYEES ENTERING AGRICULTURAL MECHANICS OCCUPATIONS, D. D. Bishop, M. L. Amberson, B. E. Richardson,

Montana State University
Department of Agricultural and
Industrial Education
Bozeman, Montana

Judgements, skills and attitudes needed by potential employees in order to qualify for available jobs in agribusiness and agricultural production. 1973, 124 pp.

TOOL IDENTIFICATION

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

This popular illustrated manual, which includes 376 individual items, encompasses power tools auto tune-up equipment, and other newer items used in the farm mechanics shops. Each item has a numbered description and is pictured in a center section keyed to match the text. The picture section can be ordered separately for distribution to classes, or for testing.

Manual $1.80
Picture Section $1.25

TIRES AND TRACKS

John Deere Distribution Service Center
Department FF/TIE
1400 - 3rd Avenue
Moline, Illinois 61265

- Covers all types of modern tires - auto, truck, implement, tractor, and large off-the-road.
- Tells how tires are constructed, rated, sized, inflated and ballasted.
- Has illustrated stories on tire failures and repairs, mounting and demounting.
- Tells how tracks are constructed, lubricated, adjusted, and inspected for wear.
- Shows how tracks are disassembled and repaired using a track press.

Text, 72 pp. $3.25
162 illustrations
Slide Set $29.65
Contains: 80 slides in 35mm color in standard 2 X 2 inch frames.

THE TRACTOR ELECTRICAL SYSTEM

AAVIM
Engineering Center
Athens, Georgia 30603

For the student who needs a practical knowledge of electricity as it applies to the tractor. Included are the following: electrical fundamentals, circuits, batteries, starters, generators, alternators, regulators.

Manual, 64 pp. $3.25
105 illustrations

TRACTOR MECHANIC, Edward W. McCann

West Virginia Vocational Curriculum Laboratory
Cedar Lakes Conference Ctr.
Ripley, W.V. 25271

These competency-based curriculum materials include student competency sheets with a competency statement, performance objective, learning activities and evaluation. The subject areas organized is into fifteen units of instruction: employment opportunities, performing general skills, and the maintenance and service of the following tractor components: storage battery, ignition circuit, cooling system, charging circuit, starting circuit, gasoline fuel system, diesel fuel system, basic engines, lubrication system, clutches, hydraulics, power train, differentials and final drive.

Curriculum Guide $15.00

TRACTORS

John Deere Distribution Service Center
Department FF/TIE
1400 - 3rd Avenue
Moline, Illinois 61265

- Has a full story on tractor types and sizes, how used for each operation.
- Gives theory of operation for tractor engines, transmissions, hydraulics, accessories.
- Tells how to prepare tractor for field operation, how to hitch, start and stop, and select gears and speeds.
- Shows proper steps in daily maintenance storage, and troubleshooting.
- Has a section on tractor safety; including highway travel.
- Tells "why" as well as "how" to promote better understanding of fundamentals by tractor operators.

Text, 304 pp. $8.95
466 illustrations
Slide Set $88.00
Contains: 220 slides in 35mm color in standard 2 X 2 inch frames.
Instructor's Kit $18.95
Contains: Three-ring binder, twelve units each with teaching guide, test and answers, laboratory exercises, study and discussion activities, transparency masters and script plus copy of student's text.

TRACTOR TRANSMISSIONS

AAVIM
Engineering Center
Athens, Georgia 30602

Designed to help train students in the fundamentals of power transmissions. Included are the following: sliding gear transmissions, planetary transmissions, hydraulic clutches.

Booklet, 32 pp. $1.75
36 illustrations

UNDERSTANDING AND MEASURING POWER

AAVIM
Engineering Center
Athens, Georgia 30602

A valuable tool for leading the student to an understanding of the relationship of horsepower, torque and speed for engines and motors. Includes the following: matching engines to loads, testing power units, types of dynamo-

meters, conducting power tests, interpreting the results, (metric) equivalents included.

Manual 80 pp. $3.95
132 illustrations

UTILITY BUILDINGS

AAVIM
Engineering Center
Athens, Georgia 30602

New edition includes charts on lumber grades and sizes. Also nail sizes. Contains new sources of plans for utility buildings. To teach the student basic concepts of building materials and construction methods. Includes types of: roof framing, foundations and wall support, lighting protection, roofing materials, siding materials, paints, plans and their sources.

Manual, 64 pp $3.95
97 illustrations.

VOCATIONAL AGRICULTURAL MECHANICS

Oklahoma State Department
Vocational and Technical Education
Curriculum and Instructional
Materials Center
1515 West Sixth Avenue
Stillwater, OK 74074

Units of instruction have been developed for specialized Agriculture Mechanics class of the eleventh and twelfth grade. Included are the following areas: Orientation and General Safety, Agricultural Mechanic Skills, Agricultural Power and Machinery, Agricultural Electrical Power and Processes, Agriculture Structure, and Soil and Water Management.

Teacher Guide $15.00
Student Manual $8.00

WELDING

John Deere Distribution Service Center
Department FF/TIE
1400 - 3rd Avenue
Moline, Illinois 61265

- Explains all kinds of gas and arc welding and cutting techniques.
- Tells how to set up equipment, prepare joints, adjust flame or arc - using many photos.
- Gives the complete story on brazing, soldering, and metal surfacing.
- Shows how to design welds for best strength and economy.
- Covers the properties of metals, how to identify, and heat treating.
- Gives all the important safety precautions for welding.
- Has a glossary of terms and explains welding symbols.

Text, 124 pp. $4.55
140 illustrations
Slide Set $47.15
Contains: 130 slides in 35mm color in standard 2 X 2 inch frames.

WIRING SIMPLIFIED

Instructional Materials Laboratory
10 Industrial Education Building
University of Missouri-Columbia
Columbia, MO 65211

This book is on how to install electrical wiring so that the job will be both practical and safe. Contains 19 chapters, including one on farm wiring. Wiring methods shown are based on the latest edition of the National Electric Code. 32nd edition.

Book, 160 pp. $1.50

WORKING IN AGRICULTURAL MECHANICS, G. C. Shinn, C. R. Weston

Gregg/McGraw-Hill
1221 Avenue of the Americas
New York, NY 10036

This text introduces students to agricultural mechanics as an aspect of agricultural industry. Content include: sketching, drawing and plan reading; woodworking and basic carpentry; metal working; basic arc welding; gas welding, cutting and heating; and tool redressing and conditions.

Text, 308 pp.	$6.60
Project Plan Book	$4.32
Transparency Masters	$7.00
Teacher's Manual & Key	$3.70
Set Package	$75.00

(5 texts, 5 project plan books, 1 set transparency masters, 1 teacher's manual and key, and 1 sound filmstrip).

Horticulture

TASK ANALYSES:
AN ANALYSIS OF TASKS PERFORMED IN THE ORNAMENTAL HORTICULTURE INDUSTRY, A. L. Berkey, W. E. Drake

Division of Agricultural and Occupational Education
Department of Education
New York State College of Agriculture and Life Sciences
Cornell Univeristy
Ithaca, New York

Includes nine types of horticulture businesses: retail florists, farm and garden supply store, landscape services, greenhouse production, nursery production, turf production (sodfarms), arborists services, wholesale florists, golf courses (public and private). Tasks and conditions for task performance in each business area are listed by function, i.e., sales, design, and management. June 1972.

Book, 127 pp. $2.00

BACK POCKET GUIDE TO ORNAMENTAL PLANTS

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

One of VEP's newest productions, the Back Pocket Guide is also one of our best! Each of the 272 species included has been illustrated with a superb pencil rendering and described fully in the accompanying text. Each description gives indentification, uses and care, dimensions of the plant, leaves and flower or fruit, origin, common name, botanical name and much more. A 317 page book with pages sewn in; you can't be without it!

Book, 317 pp. $5.95

BUSINESS PRINCIPLES OF LANDSCAPE SERVICE ORGANIZATIONS

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A student manual which describes the organization of landscape service from the first call through the billing procedure for final payment. The description includes the business forms used to complete a landscaping job. A problem to provide students with practice is included. The teacher's manual provides suggested solutions for the student practical exercise. 1972.

Student Manual, 85 pp. $2.50
Teacher Guide, 19 pp. $1.00

EXPLORATORY DRAFTING——HORTICULTURE

New Jersey Vocational-Technical Curriculum Laboratory
Rutgers University
4103 Kilmer Campus
New Brunswick, New Jersey 08903

This booklet shows how drafting is used in horticulture. It is divided into three units: Basic Drafting Tools, Basic Blue-print Reading, and Specific Horticulture Drafting. Designed for beginning students at an early stage of their vocational training, worksheets are included.

Booklet $3.50

FORMATION OF BEHAVIORAL OBJECTIVES FOR TRAINING IN SELECTING ORNAMENTAL HORTICULTURE JOBS, H. V. Griffith

Oklahoma State Department of Vocational and Technical Education
Stillwater Division of Research Planning and Evaluation

Tasks are listed in competency code sequence in these categories: plant production, landscape maintenance, sales, management, record keeping equipment operation, equipment maintenance. Also included are 94 behavioral objectives derived from the 90 competencies validated in the survey. September, 1971, 79 pp.

THE GARDEN CENTER WORKER

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A student reference manual dealing with orientation to the garden center, business practices, selling, plant identification, care of plants in the garden center, and other products offered for sale by garden centers. 1979.

GREENHOUSE OPERATION & MANAGEMENT

Vocational Instructional Services
F. E. Box 182
Texas A & M University
College Station, Texas 77843

Laboratory exercises, greenhouse structures, location and equipment, soils environment, propagation, diseases, and insects. 1973, 34 topics.

Unit, 245 pp.	$10.00
Transparencies (117)	$29.25

THE GREENHOUSE

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

This manual contains technical information and instructions about the performance of manipulative operations and also exercises to provide practical experience for the student. The manual contains the following eight sections: I. The Greenhouse Industry; II. Occupations in the Greenhouse Industry; III; Plant-Growing Structures and Equipment; IV. Managing the Greenhouse Environment; V. Production of Potted Plants; VI. Bedding Plant Production; VII. Production of Cut Flowers; and VIII. Productin of Greenhouse Vegetables. The manual shcuild be used by the student while he or she is placed in work experience with a greenhouse operator. It is recommended that each student have a copy of the manual. Revised 1974.

Student Manual, 143 pp.	$3.50

A GUIDE FOR TEACHING ORNAMENTAL HORTICULTURE, Ronald A. Brown, et al.

Curriculum Coordinating Unit
P. O. Drawer DX
Mississippi State, MS 39762

Contains as outline of suggested instruction in ornamental horticulture, examples of student activities, and recommended references. 1972, 30 pp.

HORTICULTURAL PRACTICES

New Jersey Vocational-Technical
Curriculum Laboratory
Rutgers University
4103 Kilmer Campus
New Brunswick, New Jersey 08903

This is a collection of individual activity guides organized into the four areas of landscaping, greenhouse, grounds maintenance, and horticultural mechanics. Used to reinforce instruction, these guides contain assignments that refresh the student's memory on procedures. "Stop Points" are also provided where the teacher must check progress before the student can proceed.

Package	$4.25

HORTICULTURE I

Oklahoma State Department Vocational
and Technical Education Curriculum
and Instructional Materials Center
1515 West Sixth Avenue
Stillwater, OK 74074

New Mexico (1975) Units of instruction have been developed in the following areas: Introduction to Horticulture, Plant Growth and Development, Sexual Plant Propagation, Asexual Plant Propagation, Plant Growth Regulators, Soils, Fertilizers and Plant Growth Media.

Teacher Guide $15.00
Student Manual $8.50

HORTICULTURE II

Oklahoma State Department Vocational
and Technical Education Curriculum
and Instructional Materials Center
1515 West Sixth Avenue
Stillwater, OK 74074

New Mexico (1975) Units of instruction have been developed in the following areas: Plant Problems and Controls, Irrigation. Pruning, Landscaping, Hydroponics, Growth Under Lights, and Horticulture Mechanics.

Teacher Guide $15.00
Student Manual $8.50

HORTICULTURE—COURSE OF STUDY OUTLINE

New Jersey Vocational-Technical
Curriculum Laboratory
Rutgers University
4103 Kilmer Campus
New Brunswick, N.J. 08903

Includes job description, course description, complete recommended program of studies, and shop floor plan. Outlines the course of study for all recommended courses, both shop and related. Developed by Middlesex County Vocational High School.

LABORATORY EXERCISES IN GREENHOUSE OPERATION

Vocational Instructional Services
F. E. Box 182
Texas A & M University
College Station, Texas 77843

Sequential procedure for exercise, list of materials, tools, and equipment. 35 exercises.

Manual, 87 pp. $2.00

LANDSCAPING CONSTRUCTION

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

Over 100 illustrations, along with a thorough and practical text make this manual an indispensable handbook for teachers of ornamental horticulture. Subjects highlighted include site preparation, soil preparation, planting, garden accents, and landscape construction management. Especially helpful is a typical landscape project chapter which includes samples of estimating and take-off sheets for easy explanation and reference.

LANDSCAPING DESIGN

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

This well-illustrated 48 page manual is valuable as a teaching guide and for student review and study as well. Each chapter presents an objective, suggestions for student motivation, suggested readings for preparation, and a format for class discussion and presentation. A bibliography is also included. Typical chapter topics: Space Assignment; Planning on Paper; Landscaping Plants; plus others.

Manual, 48 pp. $1.95

LANDSCAPE HORTICULTURE HANDBOOK

Vocational Instructional Services
F. E. Box 182
Texas A & M University
College Station, Texas 77843

Plant growth characteristics, growth habits and stem characterisitics, definition, terms and methods of classification, leaf, fruit, flower and characterisitics. 1967, 7 topics.

Handbook, 44 pp. $1.00

LANDSCAPING MAINTENANCE

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

Irrigation, turfgrass, safety and business practices are just a few of the practical topics explored in this valuable 49 page manual. Designed to teach fundamental landscape maintenance principles and practices, the manual is helpful for high school students and teachers as well.

Manual, 49 pp. $1.95

LANDSCAPING PLANT IDENTIFICATION

Vocational Instructional Services
F. E. Box 182
Texas A & M University
College Station, Texas 77843

Ornamental plant terms, methods for making leaf imprints, plant information blank.

Booklet & Transparency Masters $ .50
22 pp. 4 transparency Masters

LANDSCAPING YOUR HOME

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A 52 page student manual dealing with the value of a well-planned landscape. Basic principles and procedures in developing and maintaining plant materials are provided. 1977.

Student Manual, 52 pp. $2.50
Teacher Guide, 140 pp. $4.00
This 140 page teacher guide contains suggested student activities, transparency masters for each of the units presented in the student manual, and suggested test items with answers.

NURSERY PRACTICES

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

This 66 page illustrated manual is a valuable production guideline for both students and teachers. The basics of nursery production are explored, including information on softwood and semi-hardwood cuttings. A helpful appendix lists varieties of annuals and herbaceous perennials with their characteristics.

Manual, 66 pp. $2.25

NURSERY MANAGEMENT

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

Designed for the high school vocational agriculture teacher, this 92 page manual with photographs and illustrations shows a step-by-step approach to developing a program in ornamental horticulture. Topics include The Agriculture Department and Public Relations, The Nursery Industry, and a suggested calendar of monthly garden operations with a list of monthly classroom topics.

Manual, 92 pp. $6.50

THE NURSERY WORKER, PART I. BASIC PLANT AND SOIL SCIENCE

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

(Part I of two parts.) A student reference manual which provides basic information required by nursery workers. Part I is divided into the following sections: I. Introduction to the Nursery Industry, II. Soils, III. Identification and Characteristics of Ornamental Plants, IV. Plant Growth, and V. Plant Nutrients. Each section lists the behavioral objectives that are developed within the section. Revised 1973.

Student Manual, 147 pp. $2.75

THE NURSERY WORKER, PART II. NURSERY PRACTICES

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

(Part II of two parts.) A student reference manual dealing with practices performed by nursery workers. Part II is divided into the followng sections: VI. Methods of Plant Propagation, VII. Nursery Field Practices, VIII. Controlling Pests, IX. Marketing Nursery Stock, and X. Keeping Records and Accounts. Each section lists the behavioral objectives that are developed within the section. 1971.

Student Manual, 180 pp. $2.75

OPERATING TRACTORS FOR GROUNDS KEEPING AND ORNAMENTAL HORTICULTURE

AAVIM
Engineering Center
Athens, Georgia 30602

The first requirement of a grounds-keeping equipment operator is to be able to operate a tractor safely. From the study of this book, students learn procedures for servicing and operating tractors ranging in size from riding lawn mowers to 100 horsepower farm and industrial tractors. The section on driving tractors includes maneuvering the tractor and operating under the following conditions: various loads, streets and highways, rough ground, mud. 1974.

Manual, 96 pp. $3.95
210 illustrations

ORNAMENTAL HORTICULTURE

Vocational Education Media Center
10 Tillman Hall
Clemson University
Clemson, SC 29631

This curriculum guide follows the four steps of planning——objectives, learning activities, topic outline, and resources. Units are built around a core of similar occupational activities of similar content.

Curriculum Guide $5.50

ORNAMENTAL HORTICULTURE CURRICULUM OUTLINE

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

Topics ranging from career opportunties to plant propagation are highlighted in this useful outline for high school curricula in ornamental horticulture. Other important points included are plant identification, flower shop practices and judging suggestions.

Outline $ .50

ORNAMENTAL & NURSERY PLANT PRODUCTION

Vocational Instructional Services
F. E. Box 182
Texas A & M University
College Station, Texas 77843

Laboratory exercises, propagation, structures used in producing nursery plants, soil elements and nutrients, landscape planning, plant insects and diseases. 29 topics.

Book, 242 pp. $12.00
Transparencies (159) $39.75

THE PARK CARETAKER: A SUGGESTED COURSE OUTLINE FOR BUILDNGS AND GROUND MAINTENANCE, J. Richard Campbell

Mineral County Vocational-Technical Center
Keyser, West Virginia

Developed in an agricultural education workshop at West Virginia University conducted by College of Agriculture and Forestry, Division of Resource Management. Three sub-units of objectives, outline and references. 1973, 7 pp.

PROFESSIONAL FLOWER ARRANGING FOR BEGINNERS

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

This beautifully photographed book offers a step-by-step course in basic flower arranging in 128 pages. Over 125 illustrations and 16 color plates create a fine visual supplement to a clear, concise text. The beginner is introduced to fundamentals and given practical explanations of commercial floral techniques.

Book, 128 pp. $4.95
125 illustrations

PROPAGATING HORTICULTURE PLANTS

Vocational Instructional Services
F. E. Box 182
Texas A & M University
College Station, Texas 77843

An introduction to plant propagation by asexual and sexual reproduction. 1969.

Manual, 100 pp., $1.90
Transparency Masters (25)

RETAIL FLORICULTURE, BOOK I SALES, SERVICE AND PROMOTION

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A student manual written for individuals in the horticulture curriculum. The introduction provides an overview of the retail floriculture business and the people it employs. Book I is composed of individual units of study and activities which describe skills and step-by-step procedures involved in selling, promoting, and delivering floral products. The performance checklists in the practical application sections of each activity provide a means of self-evaluation for the student. This book should be used in conjunction with Retail Floriculture, Book II. Designing and Care of Flowers and Foliages. Both books should be used as student references to complement an entire course of study exploring skills and knowledge required of non-management retail flower shop employees. 1976.

Student Manual, 90 pp. $3.00

RETAIL FLORICULTURE, BOOK II DESIGNING AND CARE OF FLOWERS AND FOLIAGES

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A student manual written for individuals in the horticulture curriculum. It is composed of individual activities which describe particular floral products designed in the flower shop and the skills and step-by-step procedures involved in planning, constructing, and decorating various floral and foliage designs. The book also contains information describing the proper care and maintenance of cut and potted plant materials. The performance checklists in the practical application section of each activity provide a

means of self-evaluation for the student. This book should be used in conjunction with Retail Floriculture, Book I. Sales, Service and Promotion. Both books should be used as student references to complement an entire course of study exploring skills and knowledge required of non-management retail flower shop employees. 1976.

Student Manual, 200 pp. $5.00

TASK LISTS

Trade and Industrial Education
Materials Laboratory
College of Education
Ohio State University
Columbus, Ohio

Task lists for each of the following: arborists services, farm and garden stores (business areas tasks), public and private golf courses, greenhouse production, landscape services, nursery production, retail florists, turf production business, wholesale florists.

TREES FOR LANDSCAPING IDENTIFICATION, CULTURE, USE

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

This publication is designed to provide a simple key for 20 trees commonly used for landscaping in Ohio. Revised 1972.

Student Manual, 76 pp. $2.25

TURF MANAGEMENT

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

This student manual provides information and skills required for employment in the turfgrass industry. Sections of the manual include: Soils for Turf, Drainage for Turf, Turf Grass Species and Varieties, Turf Propagation, Turf Maintenance. 1973.

Student Manual, 109 pp. $2.85

THE AIR POLLUTION INSPECTOR

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A student manual designed to accompany a training program in the field of air pollution control. Upon completion of the manual and the course of instruction, the student should be prepared to perform entry level skills as an air pollution inspector. 1974.

Student Manual, 150 pp. $3.85

BASIC FIELD TECHNIQUES IN WILDLIFE MANAGEMENT

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

This student manual has been adapted and revised to meet Ohio wildlife conditions from a publication by the Minnesota Department of Education. Lesson content focuses upon environmental patterns, plant and habitat controls, populations, upland predators and prey, and habitat management. Other major topics include lotic and lentic water, waterfowl, wetland predators and prey, fur, and farm ponds. An appendix is included with several regional maps of Ohio. 1975.

Student Manual, 122 pp. $3.25

BASIC FORESTRY FOR SOUTHERN SCHOOLS

Vocational Education Media Center
10 Tillman Hall
Clemson University
Clemson, SC 29631

This well illustrated student text is a revision of a well known publication that has been used in southern schools for a number of years. The book consists of twenty lessons on the basic principles of understanding, developing, managing, harvesting, marketing and appreciating our forests.

Book $4.00

BASIC PRINCIPLES OF SOIL SCIENCE, L. P. Jacks and J. Roland Hamilton

Mississippi State University
Agricultural Education Department
Curriculum Coordinating Unit
P. O. Drawer DX
Mississippi State, MS 39672

This is a reference unit intended for teacher's use in supplementing basic agricultural instruction on production enterprises, improvement projects, supervised experience programs, and the total program in general relating to soil science needs. Topics are: Nature and Importance of Soil, Classification and Identification, Formation, Components, Productivity, Soil pH, Nutrients, Characteristics, Erosion, and Drainage. 9 - 12th grade level.

CATFISH FARMING: A REFERENCE UNIT, Jasper S. Lee

Curriculum Coordinating Unit
Mississippi State University
P. O. Drawer DX
Mississippi State, MS 39762

This publication is intended to provide teachers with an understanding of basic terminology and knowledge in fishery biology. Numerous photographs and illustrations are provided. Topics include: Determining Possibilities of Catfish Farming, Constructing Facilities, Producing Fingerlings, Growing, Feeding, Managing the Water, Controlling Diseases, Harvesting, Marketing and Processing. Appropriate 9th grade through junior college and adult.

CHEMISTRY REVIEW FOR FIELDMEN

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

A helpful review for teaching the principles of soil chemistry, this 49 page manual includes sections dealing with chemical building blocks, chemical reactions, physical changes, clay chemistry, plus definitions. The text is clear, concise, and serves as an excellent summary for college classes as well.

Manual, 49 pp. $2.00

CURRICULUM GUIDE FOR FOREST PRODUCTS, Dale Parnell

Oregon Board of Education and the
Division of Community Colleges
and Career Education
Salem, Oregon

Areas: forester aide, logger, sawmill worker, veneer and plywood mill worker, composition board mill worker, woodworking machine operator. Woodworking mill hand, pulp and paper mill worker, grader-tester. Includes task analyses, curriculum objectives and plan, course descriptions, occupational speciality courses, and suggested equipment facilities.

Manual, 88 pp. $2.50

EXPERIMENTS IN SOIL SCIENCE

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

Teaching soil science is easier with this thorough and practical 259 page manual. Many of the more than 50 experiments can be carried out with fruit jars, flower pots and other inexpensive materials. In addition to the manual, a set of 17 overhead transparency masters with 16 overlays review principles of the experiments. A teachers guide is also included.

Manual $7.50
Transparency Masters $2.25

FORESTRY

Oklahoma State Department Vocational
and Technical Education Curriculum
and Instructional Materials Center
1515 West Sixth Avenue
Stillwater, OK 74074

Units of instruction have been developed in the following areas: Identifying Trees, Forest Measurements (including surveying, point sampling, and plot and strip cruising), Forest Ecology and Silviculture, Forest Ecology Protection, and Forest Management.

Teacher Guide $15.00
Student Manual $4.50

FORESTY EMPLOYEE

Vocational Instructional Services
F. E. Box 182
Texas A & M University
College Station, Texas 77843

Tree identification, reforestation, protection from fires, diseases and insects, forest measurements, marketing and manufacturing forest products, and forest range management.

Manual, 283 pp. $5.50

A GUIDE FOR TEACHING AGRICULTURAL RESOURCES, B. B. Robbins, et al.

Curriculum Coordinating Unit
P. O. Drawer DX
Mississippi State, MS 39762

Contains an outline of suggested instruction in agriculutral resources, examples of student activities, and recommended references. 11th and 12th grade levels.

Guide, 29 pp.

A GUIDE FOR TEACHING FORESTRY, Charlie Thames

Curriculum Coordinating Unit
P. O. Drawer DX
Mississippi State, MS 39762

Contains an outline of suggested instruction in forestry, recommended references, and examples of student activities. 1972, 24 pp.

INTRODUCTION TO ENVIRONMENTAL PROTECTION

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A student reference prepared as an introduction for the 2 year environmental management program in water treatment operation, wastewater treatment operation, and air pollution inspection. However, it is suggested that the unit could be used with high school students interested in pollution problems that are present in our environment and to assist them in determing how these problems may be solved. This unit is not meant as a complete environmental text, but as a source of information to develop student interest in the various areas of environmental protection. Suggested experiments provide students with a greater understanding of the problems that exist in our environment today. 1972.

Student Manual, 108 pp. $3.00

PLANNING FOR AN INDIVIDUAL WATER SYSTEM

AAVIM
Engineering Center
Athens, Georgia 30602

The latest ecological factors involved in the development and use of safe water. Facts coordinated with the U.S. Environmental Protection Angency and The Agricultural Research Service to help prepare the student for developing his own water system, for employment in the water systems industry, or in the public health service. The book is designed to develop competencies in the following areas: determining the amount of water needed and available, protecting water sources from pollution, conditioning water, planning a system, disinfecting water.

Book, 156 pp. $6.95
138 illustrations

PRIVATE WATER SYSTEMS

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

Designed for persons with homes or facilities which don't have access to municipal water supplies, this handbook will tell you what you need to know. Water quality, sources, pumps, pressure tanks and water treatment are discussed fully in 60 pages of charts, plans, tables and illustrations.

Manual, 60 pp. $2.00

SOIL EROSION AND SEDIMENT POLLUTION CONTROL

Instructional Materials Laboratory
10 Industrial Education Building
University of Missouri-Columbia
Columbia, MO 65211

This instructor's guide is organized into thirteen units: surveying; man and the land; water erosion; rainfall and runoff; grassed waterways; underground outlets; terraces, diversions and cross-slope channels; soil and water conservation structures; farm ponds; planning agricultural systems; urban development; erosion control and wind erosion. Included are 4 handouts and 82 transparency masters.

Guide, 164 pp. $11.00
Problem Solutions, 34 pp. $3.00
This publication parallels the above with problem solutions and answers.
Transparencies, 82 $28.70

SOILS MANUAL FOR LAND JUDGING

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

This 58 page illustrated manual describes the procedures for choosing sites for land judging and for judging the quality of the land, along with many other topics. A land judging scorecard is provided to assist in a thorough and orderly analysis of the land features.

Manual, 58 pp. $2.25

SOILS UNIT: INSTRUCTOR'S GUIDE

Instructional Materials Laboratory
10 Industrial Education Building
University of Missouri-Columbia
Columbia, MO 65211

The SOIL UNIT for the PLANT SCIENCE CORE CURRICULUM has the following materials: 6 handouts and 20 transparency masters as well as suggestions for demonstrations. 1977 edition.

Guide, 135 pp. $3.50
Transparency Masters $7.00

TEACHER'S HANDBOOK - HARVESTING FORESTRY PRODUCTS

Vocational Instructional Services
P. E. Box 182
Texas A & M University
College Station, Texas 77843

Forest trees, forest environment, wood characteristics, identification and uses, reforestation, forest management and timber harvesting. 1972, 49 topics.

Handbook, 236 pp. $12.00
Transparencies (156) $39.00

TREE IDENTIFICATION

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A description of 55 trees of commercial importance which are commonly found in Ohio and adjoining states. Each description is based upon the following characteristics: leaf or needle, bark, twig, flower, fruit, and the conditions under which the tree commonly grows. Five to six pictures are provided for each species. Eight different keys for assisting the student in making identification are also included. The manual is intended for students of forestry and natural resources. 1975.

Student Manual, 156 pp. $4.00

TEACHING TREE IDENTIFICATION

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

This manual was developed to assist the teacher when teaching tree identification to students using the manual Tree Identification. This manual describes field-tested teaching activities that have been successful when used in class situations. The learning effectiveness of these activities is based on student involvement in the activity. All materials required for the various activities are readily available from school or community. 1975

Teacher Guide, 60 pp. $3.25

TREE IDENTIFICATION

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A series of 220 color slides of the identifying characteristics of 55 species of trees growing in the Central Hardwood Forest Region. The slides illustrate the leaves, bark, twigs, and fruit. The tree's silhouette and flowers are included where applicable. The slides are

intended to be used with Tree Identification and Teaching Tree Identification manuals. The page numbers indicated in the slide script refer to the pages in the student manual (Tree Identification) which describes the species. This allows the student manual to be used as the script for the slide series.

Slides and Script $41.80
Script Only $ .75

UREA - A PROTEIN EXTENDER IN RATIONS FOR RUMINANTS, Jasper S. Lee

Curriculum Coordinating Unit
Mississippi State University
P. O. Drawer DX
Mississippi State, MS 39762

This publication is intended to provide teachers with an understanding of basic terminology and knowledge in fishery biology. Numerous photographs and illustrations are provided. Topics include: Determining Possibilities of Catfish Farming, Constructing Facilities, Producing Fingerlings, Growing, Feeding, Managing the Water, Controlling Diseases, Harvesting, Marketing and Processing. For use with students in grades 9 - 14, adults. 1971, 103 pp.

WILDLIFE CONSERVATION EMPLOYEE

Vocational Instructional Services
F. E. Box 182
Texas A & M University
College Station, Texas 77843

Game and fish laws, game management, fish and fish pond management, shrimp, coastal fish, snakes, water safety, and pollution.

Book, 461 pp. $8.90

AGRICULTURE CAREERS

Oklahoma State Department
Vocational and Technical
Education
Curriculum and Instructional
Materials Center
1515 West Sixth Avenue
Stillwater, OK 74074

Units of instruction have been developed for use at the ninth grade level in order for a student to be able to explore the different career opportunities. 1975.

Teacher Guide $10.00
Student Manual $3.00

AN ANALYSIS OF FIFTEEN OCCUPATIONAL CLUSTERS IDENTIFIED BY U. S. O. E.,
Dr. Theodore M. Vestal, Neal A. Baker, Jr.

Grayson County College
Sherman/Denison, Texas

The Agriculture Cluster contains rationale, methodology, subgrouping into job families and occupational listings. Includes D. O. T. titles and descriptions for research, forestry, land and water management, fisheries and wildlife, mining and quarrying, petroleum and related products, productive agriculture, processing and marketing, services. Written to be used for occupational counseling. 1972, 417 pp.

CAREER PREPARATION CURRICULUM GUIDES FOR HIGH SCHOOL VOCATIONAL AGRICULTURE

Agricultural Education Curriculum
Materials Service
Room 254
2120 Fyffe Road
The Ohio State University
Columbus, Ohio 43210

1. Career Preparation in Agricultural Production, 692 pp. $7.50
2. Career Preparation in Agricultural Supplies & Services, 206 pp. $4.00
3. Career Preparation in Agricultural Equipment & Mechanics, 277 pp. $4.00
4. Career Preparation in Agricultural Products (Food Processing), 262 pp. $4.00
5. Career Preparation in Ornamental Horticulture.
6. Career Preparation in Agricultural Resources, 267 pp. $4.00
7. Career Preparation in Forestry, 178 pp. $3.50
8. Career Preparation in Environmental Protection, 307 pp. $4.00

Each of these career preparation guides defines a curriculum which is based upon the competencies needed by entry level workers in the occupation. Related competencies are stated in terms of student performance objectives and are grouped into small curriculum units which can be deleted, shifted or organized easily to fit unique state or local curriculum needs. The student performance objectives are used as a basis for the content of the instructional units which also include suggested instructional areas, student learning activities, evaluation processes, instructional materials, and supporting references, suggested facilities and equipment, teacher preparation and use of advisory committees are also provided in each guide.

CAREERS IN AGRICULTURE

Instructional Materials Laboratory
10 Industrial Education Building
University of Missouri-Columbia
Columbia, MO 65211

The manual is developed into two parts. Part I has five problem areas: the importance of choosing a career, your personal qualities for the world of work, occupational requirements and sources of information, the agricultural world of work and choosing a career in agriculture.

Part II contains selected agriculture occupational briefs in these areas:

agriculture production, agriculture supplies, agriculture mechanics, agriculture products, ornamental horticulture, agriculture resources, forestry and other agriculture areas. 1976 edition.

Manual $6.00

CAREERS I UNIT GUIDE

Instructional Materials Laboratory
10 Industrial Education Building
University of Missouri-Columbia
Columbia, MO 65211

The material is organized into four problem areas: careers in agriculture, job requirements and benefits in agricultural occupations, personal qualifications and selecting a career interest. 1970 edition.

Guide, 58 pp. $2.50
Handouts (set of 14 pads) $7.00
Transparency Masters (8) and 8 transparencies $2.80

HORTICULTURAL OCCUPATIONS

Vocational Instructional Services
F. E. Box 182
Texas A & M University
College Station, Texas 77843

Applicable to greenhouse worker, assistant groundskeeper, nursery worker, garden center employee, and parks and landscape employee.

Book, 535 pp. $10.25

OCCUPATIONAL OPPORTUNITIES IN ENVIRONMENTAL MANAGEMENT

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A student reference prepared as an introduction to the careers available to high school graduates in environmental management. The careers include: wastewater treatment operator, water treatment operator, air pollution inspector, solid waste manager, and soil conservation technician. The unit is designed to provide the student with an awareness of the job opportunities and the nature of the work, 1972.

Student Manual, 48 pp. $1.60

OPPORTUNITIES IN AGRICULTURAL OCCUPATIONS

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A student manual covers the following areas: Considering Jobs in Agricultural Businesses, Making Career Decisions, Reasons for On-The-Job Training, Applying for a Job, Wage Scale and Payroll Deductions, and The Place of the Employee Within the Business Organization. 1976.

Student Manual, 68 pp. $1.25

THIS ABUNDANT LAND

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

A collection of 49 feature articles from the Wall Street Journal, This Abundant Land is both educational and enjoyable reading for teachers and students. The book features topics such as: People Who Work the Land, How Farmers Farm, Farmers and Politics, Farming and the Environment, Agribusiness, and Research for the Future. (Makes a good supplement to Agriculture and Society filmstrips.)

Book $2.95

AG OCCUPATIONS HANDBOOK

Oklahoma State Department Vocational and Technical Education Curriculum and Instructional Materials Center
1515 West Sixth Avenue
Stillwater, OK 74074

A resource booklet to be used by agriculture students while studying agriculture careers. 1975.

Handbook $6.00

AGRICULTURAL EDUCATION INSTRUCTIONAL MATERIALS FROM "ABSTRACTS OF INSTRUCTIONAL AND RESEARCH MATERIALS IN VOCATIONAL AND TECHNICAL EDUCATION" 1972 - 1975, Thomas, Willie H., Comp.

Center for Vocational Education
Ohio State University

The resumes in this document cover a broad range of fields and occupations and are arranged in ascending order according to an accession (VT) number. Each resume includes the following information: Author(s), title, institutional source, sponsoring agency, availability, publication date, number of pages, subject terms which characterize the contents of the document, and a document abstract, author, subject, and VT-ED number cross reference indexes are provided. Instructions are given for ordering the original full text of documents cited or full text reproductions.

Print Copy $14.05
For sale by Supt. of Documents
U.S. Government Printing Office
Washington, D. C. 20402
Microfiche $ .83

AGRICULTURAL PROGRAM PLANNING GUIDES

Curriculum Publications Clearinghouse
Western Illinois University
47 Horrabin Hall
Macomb, IL 61455

These seven guides are designed to assist the applied biological and agricultural occupations teacher in enriching programs and/or to expand the offerings to include an additional agricultural cluster area. The guides are available in the following areas: Agricultural Mechanics, Agricultural Production, Agricultural Products, Agricultural Resources, Agricultural Supplies and Services, Forestry, Ornamental Horticulture. 1975.

Guide each $2.00

AGRICULTURE APPLIED MATH

Oklahoma State Department
Vocational and Technical Education
Curriculum & Instructional Materials Center
1515 West Sixth Avenue
Stillwater, OK 74074

Written for placing emphasis on mathematic skills for students in Agribusiness. Involves computation of problems a student will encounter in all types of Agriculture. 1972.

Guide $3.50

BASIC CORE CURRICULUM GUIDE FOR VOCATIONAL AGRICULTURE I

Oklahoma State Department
Vocational and Technical
Education Curriculum and
Instructional Materials Center
1515 West Sixth Avenue
Stillwater, OK 74074

Units of instruction have been developed to cover 60 percent of an agriculture teacher's time in teaching basic information in the following areas: Orientation and Careers, Leadership, Supervised Farm Training, Animal Science, Plant Science, and Agricultural Mechanics.

Teacher Manual	$12.00
Student Guide	$4.50

BASIC CORE CURRICULUM GUIDE FOR VOCATIONAL AGRICULTURE II

Oklahoma State Department
Vocational and Technical Education
Curriculum and Instructional
Materials Center
1515 West Sixth Avenue
Stillwater, OK 74074

Units of instruction have been developed to cover 60 percent of an agriculture teacher's time in teaching basic information in the following areas: Agriculture Chemicals, Plant and Soil Science, Animal Science, Supervised Farm Training, Leadership, and Agricultural Mechanics.

Teacher Manual	$12.00
Student Guide	$4.50

BASIC CORE CURRICULUM GUIDE FOR VOCATIONAL AGRICULTURE III

Oklahoma State Department
Vocational and Technical Education
Curriculum and Instructional
Materials Center
1515 West Sixth Avenue
Stillwater, OK 74074

Units of instruction have been developed to cover 60 percent of an agriculture teacher's time in teaching basic information in the following areas: Plant and Soil Science, Leadership, Animal Science, Farm Business Management, and Agricultural Mechanics.

Teacher's Manual	$15.00
Student Guide	$4.50

BASIC CORE CURRICULUM GUIDE FOR VOCATIONAL AGRICULTURE IV

Oklahoma State Department
Vocational and Technical Education
Curriculum and Instructional
Materials Center
1515 West Sixth Avenue
Stillwater, OK 74074

Units of instruction have been developed to cover 60 percent of an agriculture teacher's time in teaching basic information in the following areas: Farm Business Management, Agricultural Mechanics, Leadership, Careers, and Plant and Soil Science.

Teacher Manual	$12.00
Student Guide	$4.50

A BIBLIOGRAPHY OF FREE LOAN MATERIALS FOR AGRICULTURE EDUCATION-VOCATIONAL EDUCATION RESOURCE MATERIALS

Wisconsin Vocational Studies Center
Box 49
321 Education Building
University of Wisconsin
Madison, Wisconsin 53706

This bibliography was complied primarily for Wisconsin educators, but it may be purchased by educators from other states. Over 500 listings of instructional materials covering all areas of agriculture education are included. 1976, 40 pp.

CURRICULUM GUIDE FOR AGRICULTURE, Dale Parnell

Oregon Board of Education and the
Division of Community Colleges and
Career Education
Salem, Oregon

Six major agricultural employment areas: Agricultural Production, Agricultural Supplies, Agricultural Mechanics, Agricultural Products (processing), Ornamental Horticulture, Forestry, and Agriculture Resources. HIGHLY RECOMMENDED.

Order from document clerk
Oregon•Board of Education
Salem, Oregon $2.50

EXPLORING AGRICULTURE

Vocational Education Media Center
10 Tillman Hall
Clemson University
Clemson, SC 29631

This guide provides objectives, suggested learning activities, topic and selected references for teaching twenty-three instructional units in agriculture at the 9th and 10th grade levels.

Curriculum Guide $7.50

A GUIDE FOR PLANNING AGRICULTURAL EDUCATION PROGRAMS, A. E. Eichelberger, et al.

Curriculum Coordinating Unit
P. O. Box DX
Mississippi State, MS 39762

Contains information for use in planning instructional programs in agribusiness and natural resources on the secondary level, including an analysis of community needs.

Guide, 12 pp. $1.00

A GUIDE FOR PLANNING INSTRUCTION IN AGRICULTURAL EDUCATION, A. E. Eichelberger, et al.

Curriculum Coordinating Unit
P. O. Drawer DX
Mississippi State, MS 39762

Contains information on planning instruction on the secondary level, including space for detailed planning by the teacher in the local program. 1972, 22 pp.

A GUIDE FOR TEACHING AGRICULTURAL PRODUCTION, Charlie Thames, et al.

Curriculum Coordinating Unit
P. O. Drawer DX
Mississippi State, MS 39762

Contains an outline of suggested instruction in agricultural production, recommended references and examples of student activities. Suitable for 11th and 12th grade.

Guide, 31 pp.

A GUIDE FOR TEACHING BASIC AGRICULTURE, B. B. Robbins, et al.

Curriculum Coordinating Unit
P. O. Drawer DX
Mississippi State, MS 39762

Contains an outline of suggested instruction in basic agriculture, recommended references, and examples of student activities.

Guide, 30 pp.

IDENTIFYING AND VALIDATING ESSENTIAL COMPETENCIES NEEDED FOR ENTRY AND ADVANCEMENT IN MAJOR AGRICULTURE AND AGRIBUSINESS OCCUPATIONS, David R. McClay

U. S. Government Printing Office
Washington, D. C. 20402

Teacher educators in Agricultural Education in 40 colleges and universities identified competencies in 57 major produciton agriculture and 139 agribusiness occupations. These competencies were then evaluated by workers and employers to establish validity and a weighted mean for each competency was determined. With this information teachers can base their courses of study on the competencies workers in the occupation say are important. Further recommended uses of the report are included in the publication. HIGHLY RECOMMENDED.

MATHEMATICS FOR AGRICULTURE

New Jersey Vocational-Technical
Curriculum Laboratory
Rutgers University
4103 Kilmer Campus
New Brunswick, New Jersey 08903

Includes all the arithmetical processes that a farmer or nurseryman would need to master in the course of his career. Units on whole numbers, fractions, decimals, ratio and proportion, percentage, measurement (linear, square, cubic), weights and measures (dry and liquid), square root, and interest. Brief discussion of metric system. Appendix contains 13 pages of tables of useful information. All of the text and all word problems relate to farming and landscaping. Illustrated with humorous cartoons. Fourteen tests.

Manual $5.00

RESOURCE UNITS FOR TEACHING BASIC PRINCIPLES IN AGRICULTURAL EDUCATION COURSES IN WISCONSIN

Vocational Agriculture Pilot Program
Workshop
University of Wisconsin
Platteville, WI

Each of the following ten resource units include objectives and problem areas in their respective subject areas: The Canning Industry, Part II Vegetable Processing, Conservation - Air, Basic Dairy Herd Health, Machinery Maintenance - Agricultural Sales and Services - Tractors - Tillage Equipment, Mechanics - Materials Handling, Ornamental Horticulture - Greenhouse Management, Dairy Products Manufacturing - Butter and Cheese, Improved Reading Through Agribusiness Careers, Mechanics Concepts, Outdoor Winter Recreation.

A STUDY TO DETERMINE COMPETENCIES NEEDED BY EMPLOYEES ENTERING AGRICULTURAL PRODUCTION OCCUPATIONS, M. L. Amberson, D. D. Bishop,

Agocs
Montana State University
Department of Agriculture and Industrial
Education
Bozeman, Montana

Knowledge, skills and attitudes needed by potential employees in order to qualify for available jobs in agribusiness and agricultural production.

Manual, 185 pp.

WOMEN IN AMERICAN AGRICULTURE, A SELECTED BIBLIOGRAPHY

Economics, Statistics, and Cooperatives
Service
Washington, D. C.

More than 250 citations of materials about women in agriculture in the U.S. are contained in this partially annotated bibliography. It covers women engaged as landowners, farm managers, agricultural laborers, and working in such agricultural industries as beekeeping, silk culture, and butter production. Other references concern women in agricultural education, as agricultural scientists, as workers in agriculture-related industries, and as participants in rural organizations. Content of the material reaches from 1854 to 1977.

NON-PRINT MATERIALS

PREVIEW COPIES

The following sections contain annotations of 16mm films, filmstrips, filmloops, slides, transparencies, and other non-print media. The annotations were taken from literature supplied by film producers, distributors, and other sources. It is strongly advised that a preview copy be requested for evaluation before showing or purchasing any type of media. A preview copy can usually be obtained on a free loan basis or at a nominal cost.

COMMERCIAL PRODUCTIONS

Audiovisual presentations and written information by manufacturers should not be ignored. Many manufacturers of equipment, furniture, and materials produce short movies or similar audiovisual presentations. While promotional and commercial in nature, such media generally present good information, as well as provide students with a look at the latest technology. In addition, printed literature such as brochures and fact sheets is also available from manufacturers which could be used to supplement the media.

More information about the following media can be obtained by writing to the producer or distributor. Source addresses appear in each resource listing after the title.

ADVANCED LIVESTOCK PRODUCTION

Instructional Materials Laboratory
10 Industrial Education Building
University of Missouri-Columbia
Columbia, MO 65211

To "Beef" up you ADVANCED LIVESTOCK course, a set of 35mm color slides on ADVANCED LIVESTOCK PRODUCTION including breeds, meat grades, diseases and forages has been produced. 80 slides with script.

Slide set $28.50

ANAPLASMOSIS--A SPREADING DISEASE

The Farm Film Foundation
Suite 424 - Southern Building
1425 H Street, N. W.
Washington, D. C. 20005

Causes loss of weight and death among animals. Possible control suggested.

Film, 12 min., color FREE LOAN

ANATOMY OF THE FOWL

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

54 full-color frames take a close look at birds (primarily the chicken)--their internal and external appearance and characteristics. Photographs and diagrams present the skeletal structure, muscular system and organs, as well as the digestive, respiratory and reproductive systems. Technical terms are explained.

Silent filmstrip $9.00

APPRAISING MARKET HOGS FOR CARCASS MERIT

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A series of 30 color slides and illustrated script to assist the student in learning how to appraise market hogs for carcass value. Live hogs of different grades were obtained and photographed. The hogs were slaughtered in The Ohio State University Meat Laboratory and selected cuts photographed. (1969)

Slides and script $6.90
Script only .50

ARTIFICIAL INSEMINATION

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

A set of 17 overhead transparency masters, with seven overlays, diagrams anatomy, embryology and artifical insemination of cattle. Plates also illustrate normal and abnormal presentations of the calf at delivery.

Transparency Masters $1.50

BASIC HORSEMANSHIP KIT

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, Californian 93407

An outstanding learning resource, the six filmstrips in this multi-media kit explain the fundamental principles that every rider needs to know. Illustrated scripts and cassette narration accompany each filmstrip in the series.

Complete Series $63.00

BASIC SHEEP HANDLING SKILLS

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

Students who are new to sheep management work will benefit most from this filmstrip, but it's a good review for more experienced handlers as well. Classroom viewers see demonstrations of the straddle cast, the flank catch and cast, the correct use of the crook, and tips on herding and loading. (73 frames)

Sound Filmstrip $13.50

BEEF CARCASS JUDGING AND GRADING

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

A valuable visual aid for teaching the judging and grading of beef, this filmstrip presents views of the outside, inside, and dorsal appearances of halves of beef and a cross-section through the rib eye. In addition various views of several classes of dressed carcasses are shown side by side for comparison. (58 frames)

Silent filmstrip $9.00

BEEF CATTLE BODY TYPES

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

This unique kit of 33 slides with cassette narration features cross-sectional photographs of steers frozen in a standing position for dramatic side-by-side comparisons. The narration informally discusses the different body types and why some are better than others for commercial production. Details of the study on which the slides are based are included in the manual.

Slide set $15.75

BEEF CATTLE: CASTRATION

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

The importance of castration and the operation itself are explained fully in this useful filmstrip. Each step in the castration process is clearly demonstrated, from materials and equiptment used to proper follow-up checks for infection. The differences in quality and cuts of meat from steers and bulls are also illustrated. (40 frames)

Silent filmstrip $9.00

BEES AND HONEY

The Farm Film Foundation
Suite 424 - Southern Building
1425 H Street, N. W.
Washington, D. C. 20005

See a bee's life from hive to honey.

Film, 19½ min., color FREE LOAN

A BEGINNER'S GUIDE TO BUYING A HORSE

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

This latest VEP contribution to good horsemanship will find hours of use in your classrooms, and additional use training new members of your horse judging team. In 60 frames, your students will learn the preliminaries of selecting a breed, recognizing unsoundness in the hourse, and the paperwork involved in a final sale. Many split-screen comparisons dramatize the narration.

Sound Filmstrip $13.50

BIOTIN DEFICIENCY IN TURKEYS AND SWINE

The Farm Film Foundation
Suite 424 - Southern Building
1425 H Street, N. W.
Washington, D. C. 20005

Without sufficient Biotin, turkeys and swine are headed for trouble.

Film, 23½ min., color FREE LOAN

THE BROOD SOW AND LITTER

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

The 49 frames in this VEP filmstrip detail the proper facilities and recommended procedures for care of the brood dow and litter. Management practices such as farrowing, castration,

ear-notching, inoculation and feeding are illustrated also. An ear-notching chart is included in the illustrated script.

Silent filmstrip $9.00

THE BUSINESS OF BEES

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

Man learned long ago to manage bees for his own economic benefit. In 59 frames of close-up photography and amusing animation, VEP explores the basics of beekeeping. Your students will learn the habits of the fascinating insects, as well as their products and their importance to agriculture.

Sound filmstrip $13.50

CARE OF THE BROOD MARE AND FOAL

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

Dramatic photos taken during the actual foaling of a new colt highlight this VEP production. Your students learn all the critical details of care that lead to a healthy foaling: proper nutrition, good foaling areas, signs of approaching delivery, and care of the foal up to several weeks of age. (49 frames)

Sound Filmstrip $13.50

CATCHING AND HANDLING POULTRY

Vocational Education Productions
California Polytechnic State Univ.
San Luis, Obispo, California 93407

If poultry projects are coming up, this 39-frame filmstrip will help introduce your students to basic principles of catching and handling poultry safely, with recommended equiptment. The filmstrip concludes with an explanation of the equiptment and handling practices used in poultry judging. A lesson plan is included.

Silent filmstrip $9.00

COMMERCIAL BEEF CATTLE PROJECTS

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

This 60-frame filmstrip takes the student through each phase of management in selecting, grazing and feeding cattle on a commercial basis. Charts for calculating the many economic factors involved are also included. Special attention is given to methods and equiptment for FFA projects.

Silent filmstrip $9.00

CONTROLLING INTERNAL PARASITES OF SHEEP

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

This award-winning filmstrip takes a cartoon style and a bit of humor to teach your students about parasite control in a way they won't forget! They'll get the "inside story" on flat worms, round worms, tape worms and protozoa, and find out how to treat their animals effectively in case of parasitism. (70 frames)

Sound filmstrip $13.50

THE COW'S REPRODUCTIVE SYSTEM AND HOW IT WORKS

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A series of 50 color slides and illustrated script. Exterior and cutaway views are presented of the reproductive organs and fetus of dairy cattle. The parts are labeled and the script describes the parts and their functions.

Slides and script $11.00
Script only 1.00

DAIRY CATTLE STERILITY

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A series of 45 color slides and script illustrates both normal and abnormal conditions in the male and female reproductive tracts. The series has been organized into lessons that correspond to lessons in the Hoard's Dairyman book, Dairy Cattle Sterility. (1965)

Slides and script $9.90
Script only .50

DAIRY HOUSING FOR CALVES

Instructional Materials Laboratory
10 Industrial Education Building
University of Missouri-Columbia
Columbia, Missouri 65211

35mm slides produced in color. 30 slides with script.

Slides and script $14.00

DEWORMING CATTLE BY INJECTION

The Farm Film Foundation
Suite 424 - Southern Building
1425 H Street, N. W.
Washington, D. C. 20005

All animals are subject to worms. How to combat them is shown herein.

Film, 17 min, color FREE LOAN

DIGESTION IN THE DAIRY COW

Instructional Materials Laboratory
10 Industrial Education Building
University of Missouri-Columbia
Columbia, Missouri 65211

The series covers the complete digestive process with explanations of what the dairy cow need to produce more milk. All slides are 35mm and produced in color. 106 slides with script.

Slide set $37.00

DILEMMA OF THE NEWBORN

The Farm Film Foundation
Suite 424 - Southern Building
1425 H Street, N. W.
Washington, D. C. 20005

Scours in newborn calves is the focal point of this film.

Film, 9 min., color FREE LOAN

DOCKING SHEEP

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

Docking sheep, much like castration, is a necessary operation in efficient sheep management. This production explains the reasons, procedures, and necessary equiptment to dock sheep in the most effective manner with as little risk to the animal as possible. (63 frames)

Sound filmstrip $13.50

EMBRYO DEVELOPMENT OF THE CHICK

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

VEP takes you step-by-step through the embyonic development from egg to hatched chick with this 30-frame filmstrip. The close-up photography dramatizes the important changes in the appearance of the embryo and membranes. The illstrated script includes a lesson plan with glossary and bibliography.

Silent filmstrip $9.00

ENGLISH EQUITATION

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

This practical filmstrip takes your beginning riders from the basics of

riding in the forward seat to riding at the hand gallop and jumping obstacles. They'll see demonstrations of the correct methods for using the direct and indirect rein, good riding form, posting, and riding at various gaits. A special sequence on leads, photographed with a high-speed camera, shows how they apply to the canter. (57 frames)

Sound filmstrip $13.50

EWE AND LAMB MANAGEMENT

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

Knowing what emergencies to expect and how to handle the routine chores of lambing time is what this new filmstrip is all about. Your students will learn how to care for the ewe during pregnancy and what equipment to have available. They also see a dramatic sequence of photos as a ewe gives birth. (75 frames)

Sound filmstrip $13.50

FITTING AND SHOWING FFA BEEF

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

This VEP filmstrip takes a comprehensive look at improved fitting and showing techniques, detailing the best methods for clipping and blocking, and shaping horns and hooves. Your students will learn the proper way to show their animals, including tips on good show ring and handling techniques. (55 frames)

Sound filmstrip $13.50

FITTING AND SHOWING SHEEP

Vocational Edcuation Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

Want your students to learn how to win top honors with their project market lambs? This new filmstrip will show them step-by-step techniques of clipping, shaping, washing, trimming, and special show ring tips, including good sportsmanship. (57 frames)

Sound filmstrip $13.50

GESTATION/LACTATION PERIOD MANAGEMENT OF SOWS AND GILTS

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A series of 24 color slides and script considers both feeding and management suggestions. It might be used to introduce the unit. Local and other research information may be added as needed. Both animated drawings and actual pictures are used. (Revised 1978)

Slides and script $5.50
Script only .75

GOOD DOIN' CALF

The Farm Film Foundation
Suite 424 - Southern Building
1425 H Street, N. W.
Washington, D. C. 20005

From scenic valleys of Oregon to the lush pastures of the South, cow/calf operatores seek ways for greater feed efficiency. While a trade name is mentioned too frequently, the educational content of the film is good enough to out-balance this objection.

Film, 15 min., color FREE LOAN

GRADING EGGS FOR QUALITY

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

USDA egg-grading standards are explained and demonstrated in 60 frames of art

and through-the-shell photos. Quality factors discussed in detail include shell cleanliness, air cells, candling operations, quality of the egg contents and the Haugh Unit Scoring System.

Sound filmstrip $13.50

GROOMING YOUR HORSE

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

Special tips on fitting horses for show will give your students an edge as they ready their own animals for halter or showmanship classes. They'll see currying, brushing, washing, and receive specific instructions for clipping, shortening the mane, thinning the tail, applying hoof dressings, and many "professional" techniques. (65 framed)

Sound filmstrip $13.50

HIDDEN ENEMY

The Farm Film Foundation
Suite 424 - Southern Building
1425 H Street, N. W.
Washington, D. C. 20005

Fighting internal parasites in hogs. Vividly effective.

Film, 12½ min., color FREE LOAN

HIDDEN HAZARD

The Farm Film Foundation
Suite 424 - Southern Building
1425 H Street, N. W.
Washington, D. C. 20005

Shows a major hazard in the business of raising pigs--profit-robbing worms in lungs, liver and intestines. It strongly recommends a preventive procedure to reduce and/or eliminate this hazard.

Film, 11 min., color FREE LOAN

HOOF CARE

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

Caring for a horse's feet is of basic importance to every horseman, and with this filmstrip your classes learn the fundamentals: hoof anatomy and the functions of each of the parts of the hoof. Step-by-step photos illustrate the procedures for trimming a hoof to maintain or restore its proper conformation. (61 frames)

Sound filmstrip $13.50

HORSE BREEDS AND COLOR TYPES

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

Each of the 28 slides in this series was photographed especially for VEP and chosen to meet the needs of teachers while stimulating classroom interest. A fully illustrated 26-page reference manual accompanies every set of slides and is a valuable source of information about each breed.

Slide set $19.50

HOPSE SAFETY

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

Novice and experienced horsemen both will benefit from this helpful filmstrip. They'll learn to watch for faulty tack, wear appropriate clothing, ride a safe distance apart, catch and tie a horse properly, and keep the upper hand when dealing with a horse.

Sound filmstrip $13.50

HOW TO DO A POULTRY AUTOPSY

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

Proper procedures for conducting a poultry autopsy--from methods of killing to final washup and carcass disposal--are depicted in 67 frames. Various diseases and abnormal conditions are examined in detailed photographs. ("Anatomy of the Fowl" is a helpful introduction to this filmstrip.)

Silent filmstrip $9.[illegible]

THE INSIDE STORY OF MADAM BROOD SOW

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A series of 27 color slides with illustrated script show the sow's reproductive tract a progressive stages during gestation. The series was adapted from the Ralston Purina Company filmstrip of the same name. (1972)

Slides and script $6.20
Script only .50

LIVESTOCK

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

This study set of eight overhead transparency masters and nine overlays includes beef, swine, lamb, horse and dairy cow. Masters with overlays illustrate the animal outline, animal parts and standard wholesale cuts with percentages by weight.

Transparency masters $1.50

LIVESTOCK JUDGING KIT

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

Completely revised and expanded, VEP's new judging kit now contains seven classes of sheep, eight classes of beef and six steer classes, with views of each class from the side, rear and front. Teachers and students both will appreciate the helpful manual included with the kit. It discusses oral reasons and gives a complete listing of sheep and beef terms. Additions to the set will be made periodically to expand the number of classes shown.

Slide set $30.00

MEAT CUTS

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

A series of eight carcass diagrams for each of the major meat animals, plus six plates with overlays showing typical retail cuts make up this study set of 14 overhead transparency masters and 14 overlays. The carcass diagrams include the bone structure and wholesale meat cuts; the plates illustrate comparable cuts of beef, lamb, pork and veal.

Transparency masters $1.50

OUTLAWS

The Farm Film Foundation
Suite 424 - Southern Building
1425 H Street, N. W.
Washington, D. C. 20005

Internal and external parasites that infect beef cattle are examined.

Film, 9½min., color FREE LOAN

PLUS OR MINUS E

The Farm Film Foundation
Suite 424 - Southern Building
1425 H Street, N. W.
Washington, D. C. 20005

What happens to swine, poultry and cattle who don't get enough Vitamin E.

Film, 21 min., color FREE LOAN

POULTRY BROODING MANAGEMENT

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

In 70 frames, this production examines the techniques of a successful brooding enterprise; brooding systems, types of brooders for floor brooding, getting ready to brood and management practices. Diagrams and photographs illustrate the equiptment and sanitation procedures necessary.

Silent filmstrip $9.00

POULTRY SELECTION AND JUDGING, Parts I and II

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

These two filmstrips prepare students for poultry shows and competition. Part I is an introduction to poultry selection and judging skills, while Part II details the popular breeds of chickens and the major and minor defects in production poultry.

Two silent filmstrips $15.50

POULTRY TRANSPARENCY MASTERS

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

From the parts of an egg to careers in the poultry industry, this complete set of 35 plates and 19 overlays, plus an 8-page teacher's guide is an indispensable visual aid for teaching poultry. Transparency masters also illustrate embryonic development of a chick; parts, types and patterns of feathers; internal body systems and much more.

Transparency masters $3.50

PRE-NATAL DEVELOPMENT OF THE CALF

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

This valuable filmstrip, for biology as well as agriculture, traces the development of the calf embryo and fetus from approximately 30 days after conception to 190 days. The gradual development of external parts is clearly shown, and a ruler in each frame indicates scale.

Silent filmstrip $9.00

PROFIT DOLLARS AND GOOD SENSE

The Farm Film Foundation
Suite 424 - Southern Building
1425 H Street, N. W.
Washington, D. C. 20005

It deals with shipping fever, foot rot and liver abscesses in cattle.

Film, 12½ min., color FREE LOAN

THE PROTEIN BONUS

The Farm Film Foundation
Suite 424 - Southern Building
1425 H Street, N. W.
Washington, D. C. 20005

This film shows how the protein utilization of swine feeds may be increased. This, in turn, promotes a faster rate of gain which means, of course, more profit. NOTE: While a trade name is mentioned often, the information contained in the film was so pertinent that it was accepted for Foundation distribution.

Film, 12 min., color FREE LOAN

RAISING DAIRY REPLACEMENTS

Instructional Materials Laboratory
10 Industrial Education Building
University of Missouri-Columbia
Columbia, Missouri 65211

Slides are 35mm and produced in color. 40 slides with script.

Slide set $17.00

SHEEP MANAGEMENT SERIES

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

Students and teachers will appreciate the thorough and concise treatment of all phases of sheep management presented in the six filmstrips of the series. Also included, to make the kit one of the most comprehensive ever, is a helpful teacher's manual and a set of transparency masters illustrating life cycles of several internal parasites of sheep.

Complete series $60.00

SHEEP CASTRATION

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

Castrating ram lambs is a vital part of any ranching operation or sheep project. This filmstrip demonstrates proper procedures for castration, with each of the most popular types of instruments: the all-in-one, the emasculator, the elastrator, and the ordinary pocket knife. Heavy emphasis is also given to sanitation, pre-operative and post-operative procedures.

Sound filmstrip $13.50

SWINE CARCASS EVALUATION

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

This 60-frame filmstrip examines the relationship between swine as live animals and as dressed carcasses; featuring rear, side and class views. A view of the chops is also shown to confirm placing. Included in the accompanying manual is a chart that depicts key points in selecting meat-type market hogs.

Silent filmstrip $9.00

SWINE DIGESTION

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A series of 12 color slides and illustrated script show the digestive process from mouth to large intestine.

Slides and script $2.80
Script only .75

THAT'S A GOOD IDEA

The Farm Film Foundation
Suite 424 - Southern Building
1425 H Street, N. W.
Washington, D. C. 20005

Clever suggestions for pork production. A number of unusual on-farm feeding operations are shown. See and learn.

Film, 14 min., color FREE LOAN

THE WESTERN EQUITATION CLASS

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

Knowing what the judges look for separates the winners from the losers. This filmstrip is a how-to-win presentation that will give your students clear and accurate instructions on correct form in mounting, dismounting, achieving the proper seat, hand positions, backing the horse, and maintaining a skillful attitude throughout the performance. (53 frames)

Sound filmstrip $13.50

AGRICULTURAL WEED CONTROL

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

The 53 frames of this sound filmstrip explain and illustrate weed differences, effective weed control, and basic weed control methods. Weed identification is touched upon as a means to achieve that control.

Sound filmstrip $13.50

AGRICULTURAL WEED IDENTIFICATION

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

This helpful slide set of 10 common weeds shows three close-up views of each weed, its seed, and one overall look as well, to total 40 slides. The illustrated manual accompanying the slides details each weed's appearance and growth characteristics.

Slide set $16.00

APPLYING PESTICIDES

AAVIM, Engineering Center
Athens, Georgia 30602, 1976

A complete instructional package developed in cooperation with the U. S. Environmental Protection Agency, written in simple language, illustrated in full color for both secondary and college use. The materials consist of:

Manual $4.95
A 96-page book 4-color illustrated. Includes: Recognizing Pests, Selecting Pesticides, Handling Pesticides Safely and servicing, operating, cleaning equipment.

Audiovisuals $195.00
Consists of 35mm color slides and cassette narrative paralleling the manual. 337 slides, printed script, 6 cassette tapes, Manual, Teacher's Guide.

Teacher's Guide $2.00
40-page series of questions, answers, problems and laboratory exercises based on the manual.

Student Workbook $2.00
Similiar to the Teacher Guide, but with no answers.

COMBINE SAFETY

The Farm Film Foundation
Suite 424 - Southern Building
1425 H Street, N. W.
Washington, D. C. 20005

This is not a "rules" film. Its main function is to alert the viewer to the fact that the paramount safety device on a combine is the operator.

Film, 14 min. FREE LOAN

CORN ROOT DEVELOPMENT

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A series of 21 color slides and script showing the extent of corn root developement from seedling stage to maturity. The soil has been carefully pulled away from the roots and the root pattern photographed. The corn was grown on medium textured soil and yielded well over 100 bushels per acre.

Slides and script $4.80
Script .75

CROP SEED IDENTIFICATION

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

A new addition to the VEP slide sets, Crop Seed Indentification shows close-up views of 69 different seeds. The list of species is based on California curriculum code rules for agronomy contests. Included are: wheat,

12 beans, 5 corn, 12 legumes, 7 grasses, plus many others. A brief written description explains important characteristics of each seed.

Slide set $30.00

THE EARLY GROWTH OF CORN

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A series of 26 color slides and script showing the development of the corn plant from germination to pollination. Special emphasis relative to date and depth of planting has been made.

Slides and script $6.00
Script .75

FORAGE HARVEST SAFETY

The Farm Film Foundation
Suite 424 - Southern Building
1425 H Street, N. W.
Washington, D. C. 20005

Covers positive aspects of safety with forage harvesters, blowers, power-loading wagons, etc.

Color film, 10½ min. FREE LOAN

GENETICS

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

This set of overhead transparencies includes nine plates, seven overlays and a teacher's guide as well. Topics covered include definitions, mitosis, lethal genes and the checkerboard method that demonstrates combinations of genes producing different characteristics.

Transparency masters $1.65

GOLD THAT GROWS

The Farm Film Foundation
Suite 424 - Southern Building
1425 H Street, N. W.
Washington, D. C. 20005

Shot on location in Europe, East Asia and Latin America. Gives America farmer basic awareness of a profitable soybean market.

Film, 20 min., color FREE LOAN

GOLDEN LINK

The Farm Film Foundation
Suite 424 - Southern Building
1425 H Street, N. W.
Washington, D. C. 20005

Excellent exposition of techniques used in hybridizing and producing seed corn.

Film, 13½ min., color FREE LOAN

HYBRID VIGOR--KEY TO ABUNDANCE

The Farm Film Foundation
Suite 424 - Southern Building
1425 H Street, N. W.
Washington, D. C. 20005

A great picture about our basic feed grain.

Film, 27 min., color FREE LOAN

INSECT IDENTIFICATION LEARNING KIT

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

This valuable classroom teaching aid holds 51 full-color slides, 20 sets of full-color printed plates reproducing the slides and a 12-page summary to accompany them. The kit includes common and scientific names for each insect and summarizes information examined more fully in the Insect Identification Manual. (see print materials)

Slide set $30.00

INVISIBLE ACRES

The Farm Film Foundation
Suite 424 - Southern Building
1425 H Street, N. W.
Washington, D. C. 20005

How can farmers increase crop production and profit without adding more land, labor and equipment? How does von Liebig's "law of the minimum" apply to crop yields today? When do crops fail to respond to additonal applications of N, P, and K?

Film, 30 min., color FREE LOAN

THE LATE GROWTH OF CORN

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A series of 28 color slides and script showing the development of the corn plant from fertilization to maturity.

Slides and script $6.40
Script only .75

LIMING ACID SOILS

Ohio Agricultural Education
Curriclum Materials Service
The Ohio State University
Room 254
2120 Fyffee Road
Columbia, Ohio 43210

A series of 116 color slides with illustrated script divided into the following topics: Why Treat Acid Soils? Why Relime? Soil Testing, How to Evaluate Agricultural Liming Materials, Where Does Lime Come From? How to Apply Lime, and When to Apply Lime. (1971)

Slides and script $23.20
Script only .75

LOOK TO THE HARVEST

The Farm Film Foundation
Suite 424 - Southern Building
1425 H Street, N. W.
Washington, D. C. 20005

Axial flow combines bring a really new concept to the business of harvesting grain. In this finely constructed film the axial flow method is vividly and understandably explained.

Film, 12½ min., color FREE LOAN

N2N--A DRAMATIC BREAKTHROUGH IN ZINC FERTILIZATION

The Farm Film Foundation
Suite 424 - Southern Building
1425 H Street, N .W.
Washington, D. C. 20005

When, by careful, scientific steps, the chemical wizards formulated N2N, zinc fertilization was ready to give a big boost to many crops.

Film, 13 min., color FREE LOAN

PLANT SCIENCE

Vocational Education Media Center
10 Tillman Hall, Clemson University
Clemson, South Carolina 29631

This set of 71 overhead transparencies deals with the basic principles of plant science. It covers classifcation, basis plant parts and functions, differences in plant structure, plant propagation, and plant culture. Ideal for vocational agricultural students and also helpful for biology or botany classes.

Transparencies $12.00

POSITIVE PLACEMENT OF FERTILIZER

The Farm Film Foundation
Suite 424 - Southern Building
1425 H Street, N. W.
Washington, D. C. 20005

City consumers profit in the long run

from more efficient use of plant food.

Film, 12½ min., FREE LOAN

PRECISION LIQUID FERTILIZATION

The Farm Film Foundation
Suite 424 - Southern Building
1425 H Street, N. W.
Washington, D. C. 20005

Best film on fertilization we've ever been privileged to recommend.

Film, 14½ min., color FREE LOAN

SOIL AND ITS PROPERTIES

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A series of 64 color slides and illustrated script designed for courses requiring a basic knowledge of soils. The series first deals with how we depend on the soil for our living and the various persons requiring a knowledge of soil properties in carrying out their work. The remainder of the series deals with the following soil properites: Soil Horizons, Soil Color and Drainage, Soil Texture, Soil Structure, and Soil Moisture. The series should be valuable for students in production agriculture, agricultural conservation education, horticulture, agricultural mechanics, and conservation aid programs. (1971)

Slides and script $14.10
Script only .75

SOIL TESTING AND PLANT PROPAGATION

Career Aids, Inc.
8950 Lurline Avenue, Dept. T-4
Chatsworth, California 91311

These five multimedia programs present the fundamentals of soil sampling, show common and advanced testing procedures in a concise, sequential manner. Each consists of a Color Filmstrip, matching set of 35mm slides, cassette, Student Workbook.

How to Collect and Test Soil Samples $40.00

How To Root Plant Cuttings $40.00

How To Perform Germination and Viability Tests on Seeds $40.00

How To Safely Use Sprays and Dusts On Plants $40.00

An Introduction To Plant Pollination Techniques $40.00

TILLAGE SYSTEMS FOR CORN

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A series of 70 color slides and illustrated script dealing with the agronomic and economic aspects of commonly used tillage systems for corn. (1972)

Slides and script $15.40
Script .75

TWELVE MONTH SUMMER

The Farm Film Foundation
Suite 424 - Southern Building
1425 H Street, N. W.
Washington D. C. 20005

A five-star film on de-hydrated alfalfa.

Film, 18 min., color FREE LOAN

WAGON SAFETY

The Farm Film Foundation
Suite 424 - Souther Building
1425 H Street, N. W.
Washington, D. C. 20005

Included is wise counsel about hazards

in connection with blowers, mixers, and spreaders. An arm, a leg, an eye, or your life could be saved by heeding the messages herein.

Film, 10½ min. FREE LOAN

WHEAT--FOOD FOR THE WORLD

The Farm Film Foundation
Suite 424 - Southern Building
1425 H Street, N. W.
Washington, D. C. 20005

From an American wheat farm to any place in the world.

Film, 27 min., color FREE LOAN

WHEAT FOODS AROUND THE WORLD

The Farm Film Foundation
Suite 424 - Southern Building
1425 H Street, N. W.
Washington, D. C. 20005

Fascinating food travelogue in Europe and Asia.

Film, 11 min., color FREE LOAN

AGRIBUSINESS

Career Aids, Inc.
8950 Lurline Avenue, Dept. T-4
Chatsworth, California 91311

Agriculture has once again emerged as "big business"---but with a new look. Family-owned enterprises still exist, but an increasing number of large corporations have involved themselves in today's booming agricultural enterprise. This SPECIAL REPORT weighs the pro's and con's of this economic shift; is it helping or hurting the consumer? And as food becomes a more significant commodity in the global marketplace, what are some of the ways that consumers, farmers, and others involved in agribusiness can strengthen the American farming system? 1978 production.

2 filmstrips, 2 cassettes, color, with Program Guide $52.00

CREDIT, A CAPITAL IDEA

The Farm Film Foundation
Suite 424 - Southern Building
1425 H Street, N. W.
Washington, D. C. 20005

Snappy animation proves that credit should be part of a farmer's---or anyone's---capital structure.

Film, 13½ min., color FREE LOAN

DYNAMICS OF ANIMAL AGRICULTURE

The Farm Film Foundation
Suite 424 - Southern Building
1425 H Street, N. W.
Washington, D. C. 20005

Contributions of feed industry to animal agriculture dramatically told.

Film, 26 min., color FREE LOAN

EVOLUTION IN MARKETING FARM PRODUCTS

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

Learning can be fun for your students with this animated filmstrip that traces the marketing of farm products. The early beginnings with the barter system are explored, as well as the roles of such related topics as transportation, storage, grading and financing.

Silent filmstrip $9.00

FARMERS WHO BANK ON THEMSELVES

The Farm Film Foundation
Suite 424 - Southern Building
1425 H Street, N. W.
Washington, D. C. 20005

It's a wonderful thing, our Farm Credit System. See the way it works.

Film, 20 min., color FREE LOAN

IN THE PURSUIT OF EXCELLENCE -- AGRICULTURAL EXCELLENCE

The Farm Film Foundation Suite
Suite 424 - Southern Building
1425 H Street, N. W.
Washington, D. C. 20005

Highlights management decisions the farmer must take.

Film, 13 min., color FREE LOAN

KEEPING AGRICULTURE RECORDS

Vocational Education Media Center
10 Tillman Hall, Clemson University
Clemson, South Carolina 29631

This unit provides the basic elements of keeping and using records in agriculture or in any type of business. It is designed for instruction for three to four weeks to be used with first year students. There are 33 transparencies in the set.

Teacher guide	$1.25
Transparencies	4.00
Record book	1.25

ORGANIZATION AND FUNCTION OF AGRICULTURAL BUSINESSES

Vocational Education Media Center
10 Tillman Hall, Clemson University
Clemson, South Carolina 29631

This set of 13 transparencies considers the functions, services provided, and risks involved in business ownership. The basic types of business organizations are then applied to agriculture.

Transparencies $2.00

PRO AG - NEW TOOL FOR TODAY'S FARM MANAGER

The Farm Film Foundation
Suite 424 - Southern Building
1425 H Street, N. W.
Washington, D. C. 20005

To maximize the profit potential, today's boss man must ask a never-ending series of questions. Herewith, through a visual trip to American farms and to a Pro-Ag workshop, these q's and a's are provided. The new tool is of course the impact of the computer when it is harnessed to solve problems for America's largest industry - agriculture.

Film, 14 min, color FREE LOAN

PROFITABLE PORK SELECTION

The Farm Film Foundation
Suite 424 - Southern Building
1425 H Street, N. W.
Washington, D. C. 20005

A neat way to show how good pork chops are selected on the hoof!

Film, 12 min., color FREE LOAN

SEED THAT REALLY GREW

The Farm Film Foundation
Suite 424 - Southern Building
1425 H Street, N. W.
Washington, D. C. 20005

A great film about a great farmer cooperative. (Available in Del., Ky., Md., Va., and W. Va.)

Film, 23½ min., color FREE LOAN

SOME CALL IT LUCK

The Farm Film Foundation
Suite 424 - Southern Building
1425 H Street, N. W.
Washington, D. C. 20005

A story of two young farmers and their different approaches to the business parts of their operations.

Film, 19½ min., color FREE LOAN

SOME LAND OF MY OWN

The Farm Film Foundation
Suite 424 - Southern Building
1425 H Street, N. W.
Washington, D. C. 20005

A young farm couple learn how to become landowners through using long-term credit profitably.

Film, 17½ min., color FREE LOAN

SUPPORT SYSTEM

The Farm Film Foundation
Suite 424 - Southern Building
1425 H Street, N. W.
Washington, D. C. 20005

Patronage, participation and investment in their cooperative---that's what this really sharp film is all about as told directly to the camera by Southern States employees, management and, most especially by the farmers themselves. (Available in: Del., Ky., Md., Va., and W. Va.)

Film, 15 min., color FREE LOAN

ARC WELDING ELECTRODE SELECTION

Hobart Brothers Co.
Box EW-310
Troy, Ohio 97879

This film deals with factors to consider in electrode selection.

Film, 24 min. FREE LOAN

CARBURETOR LABORATORY

Instructional Materials Laboratory
10 Industrial Education Building
University of Missouri-Columbia
Columbia, Missouri 65211

This slide series and a 24-minute cassette tape cover the complete disassembly and assembly of the small gasoline engine carburetion system. Emphasis is given to the proper use of tools, and the basic function and adjustment of the carburetor. The three common carburetors--Flo-Jet, Vacu-Jet, and Pulsa-Jet--are covered in this series. 56 slides with script and programmed cassette tape.

Sound slide set $30.50

CAREERS IN AGRICULTURAL EQUIPMENT MECHANICS

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

The modern farmer and rancher must depend on those who sell, set-up and service agricultural equipment. Keeping the farm machines of this country running is a vital job--whether it's delivery, parts, set-up, maintenance or mechanics. This new filmstrip outlines each career area and will give your students a good idea of what this side of the industry is all about.

Sound filmstrip $13.50

CONCRETE MATERIALS PROPORTIONING

Instructional Materials Laboratory
10 Industrial Education Building
University of Missouri-Columbia
Columbia, Missouri 65211

This new 80-slide series covers four areas of concrete study: history and uses of concrete and cement; how to select good materials; proper proportioning methods; how to do a classroom demonstration mix. 80 slides, cassette and script. 1977 edition.

Sound slide set $55.00

CONCRETE: PLACING, FINISHING AND CURING FLAT SLABS

Instructional Materials Laboratory
10 Industrial Education Building
University of Missouri-Columbia
Columbia, Missouri 65211

This new 80-slide series covers: construction of exterior slabs for use as walks, patios, feeding floors, driveways and similar uses. Actual practices are illustrated on demonstration sites and slabs. Script and tape included. 1978 edition.

Sound slide series $55.00

DO IT RIGHT

The Farm Film Foundation
Suite 424 - Southern Building
1425 H Street, N. W.
Washington, D. C. 20005

Having used a chain saw for many years, we can testify that the folks responsible for this picture haven't missed a single hazard.

Film, 20 min., color FREE LOAN

ELECTRIC MOTORS, SELECTION-PROTECTION-DRIVES

AAVIM
Engineering Center
Athens, Georgia 30602, 1972

To help prepare students in occupations where they must be able to select motors for specific jobs. Information and procedures are given for selecting motors based on the following characteristics: type, size, speed, duty, overload protection, bearings, drives.

Manual (53 pp., 63 ill., 3 colors	$ 3.25
Slide set (92 2x2 slides)	49.85
Transparency Masters	7.95
Transparency set	69.00

AN EXERCISE IN DIFFERENTIAL LEVELING

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

Photos, diagrams and straightforward narration take the mystery out of the differential leveling process in 52 frames. A typical leveling problem is presented and followed from beginning to end. Fieldbook entries are carefully illustrated and the necessary computations worked out. "Error of closure" is also demonstrated.

Sound filmstrip $13.50

FARM TRACTOR SAFETY

The Farm Film Foundation
Suite 424 - Southern Building
1425 H Street, N. W.
Washington, D. C. 20005

An intensive demonstration of major operating hazards and how to cope.

Film, 10½ min. FREE LOAN

HOW ELECTRIC MOTORS START AND RUN

AAVIM
Engineering Center
Athens, Georgia 30602, 1973

A self-study unit designed to teach the student basic principles of electric motor operation. The unit describes and illustrates the following concepts:
- magnetic attraction and repulsion
- how a permanent magnet may be made to rotate
- how electric motors differ

Manual, 24 pp., 94 ill.	$ 2.75
Audiovisual Kit 2 sound filmstrips, publication	69.95

OVERHEADS FOR ECOLOGY AND AGRICULTURE

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

Transparencies $3.60

LAND MEASUREMENT

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

Fundamentals of land measurement are illustrated and easily understood in this set of 14 overhead transparency masters with six overlays. The set presents the principles of the "rectangular survey" system used throughout the U. S. and explains how to measure different shapes of fields. A four-page teacher's guide is included.

Transparency Masters $1.75

CARE AND OPERATION OF SMALL ENGINES, Volume 1

AAVIM
Engineering Center
Athen, Georgia 30602, 1975

To prepare a student for operating and servicing his own engine, or for employment in industries where small engines are operated. Gives detailed step-by-step procedures on basic principles and how to service and/or adjust the following: fuel system, air cleaners, carburetors, batteries, starters, spark plugs, crankcase breathers.

Manual (150 pp., 274 ill., 4 colors)	$ 6.95
Slide set (209 2x2 slides)	97.00
Transparency Masters	7.95

ENGINES

John Deere Distribution Service Center
Department FF/TIE
1400-3rd Avenue
Moline, Illinois 61265

These four films are 16mm color with an optical sound track. They run from 12 to 16½ minutes in length.

Clean Air That Engines May Live	$ 75.50
Efficient Cooling Systems That Engines May Live	$60.75
Function of Lubrication That Engines May Live	54.50
Clean Fuel That Engines May Live	63.00
Set of four films above	213.25
Set of four on videotape	54.00

LAYING CONCRETE MASONRY

Instructional Materials Laboratory
10 Industrial Education Building
University of Missouri-Columbia
Columbia, Missouri 65211

A filmstrip with script prepared by Agricultural Mechanics Specialists and Portland Cement Association Representatives. 116 frames.

Filmstrip	$6.00

MAGNETO IGNITION LABORATORY

Instructional Materials Laboratory
10 Industrial Education Building
University of Missouri-Columbia
Columbia, Missouri 65211

This slide series covers the complete disassembly, testing of components and assembly of the small engine ignition system. A cassette tape, 28 minutes in length, is included to make this an excellent individualized instructional tool. 48 slides with script and programmed cassette tape.

Sound slide series	$26.00

MAGNETO IGNITION SYSTEM

Instructional Materials Laboratory
10 Industrial Education Building
University of Missouri-Columbia
Columbia, Missouri 65211

This slide series covers the subject matter related to the small engine ignition system. The components of the ignition system and their function are discussed in full, beginning with the basic electricity related to ignition. Following the basic discussion, the complete magneto ignition cycle is covered for both systems. 69 slides with script and programmed tape.

Sound slide series	$35.50

MAINTAINING THE LIGHTING AND WIRING SYSTEM

AAVIM
Engineering Center
Athens, Georgia 30602, 1974

A how-to-do-it maintenance book for home electrical repairs. Illustrated step-by-step procedures are given to enable the student to do the following: replace cords, plugs and sockets; replace fuses and circuit breakers; replace single-pole, 3-way and 4-way switches; replace light fixtures; splice broken wires.

Manual (80 pp., 169 ill., 4 colors)	$ 4.50
Slide set (178 2x2 slides)	97.00
Transparency masters	15.00

MAINTENANCE AND REPAIR OF SMALL ENGINES, Volume II

AAVIM
Engineering Center
Athens, Georgia 30602, 1974

To prepare the student for maintenance and repair of his own engine, or for employment in industries where small engines are repaired. Gives detailed step-by-step procedures on basic principles and how to repair the following: starters, ignition systems, generators, carburetors, flywheels, valves, cylinders, pistons and rods, camshafts, crankshafts, and cylinder heads.

Manual (208 pp., 54 ill., 4 colors)	$ 8.95
Slide set (331 2x2 slides)	198.00
Transparency masters	7.95

MICRO-WIRE ARC WELDING

Hobart Brothers Co.
Box EW-310
Troy, Ohio 97879

This film stresses the economics of this type of welding.

Film, 30 min. FREE LOAN

OXY-ACETYLENE WELDING:
Flat Postion Welds

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

These 67 frames of detailed close-up photography afford an unmatched look at types of welding flames and the welding torch in action. This production follows up information presented in the above filmstrip, and explores proper methods of making simple flat position welds. Safety precautions are once again emphasized.

Silent filmstrip $9.00

OXY-ACETYLENE WELDING
Setting Up the Equipment

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

In 53 frames, this full-color filmstrip presents step-by-step procedures in setting up and lighting oxy-acetylene welding equipment. Each operational step is pictured and described, with photographs and diagrams combined to emphasize key points. Necessary safety precautions are also explained.

Silent filmstrip $9.00

PLACING, FINISHING AND CURING
CONCRETE SLABS

Instructional Materials Laboratory
10 Industrial Education Building
University of Missouri-Columbia
Columbia, Missouri 65211

A filmstrip with script prepared by Agricultural Mechanics Specialists and Portland Cement Association Representatives. 143 frames.

Filmstrip $7.00

PLANNING A FARM SHOP LAYOUT

NASCO
Fort Atkinson, Wisconsin 53538

Animated drawings illustrate the steps in planning a farm shop layout. Includes 40-page manual.

Filmstrip (69 frames) $9.90

POWER TRANSMISSION

Vocational Education Media Center
10 Tillman Hall, Clemson University
Clemson, South Carolina 29631

Teachers will want this set of 85 transparencies in multiple color showing the basic principles of power transmission. It includes devices used for power transmission such as bearings, belts and pulleys, chains, gears, couplings, clutches, power take offs, transmissions and differentials; examples of these in use; and characteristics of these devices.

Transparencies $9.25

SELECTING AND STORING FUELS AND LUBRICANTS

AAVIM
Engineering Center
Athens, Georgia 30602, 1973

As the supply of petroleum fuels and lubricants becomes smaller and the cost continues to increase, it is important that everyone learn how to select them properly and to store them safely. From the study of this book a student will be able to select and store the following fuels and lubricants properly: gasoline, LP gas, crankcase oil, gear lubricant, hydraulic fluid, diesel fuel.

Manual (55 pp., 91 ill., 4 colors)	$ 3.45
Slide set (66 2x2 slides)	29.85
Transparency masters	7.95

TRACTOR MAINTENANCE PRINCIPLES AND PROCEDURES

AAVIM
Engineering Center
Athens, Georgia 30602, 1975

A valuable text for every tractor owner, operator, serviceman or mechanic. The purpose is to develop competencies in periodic tractor maintenance. Designed and well illustrated to tell how to do such jobs as follows: adjusting valves, adjusting carburetors, adjusting clutches, timing ignition, servicing diesel fuel filters.

Manual (152 pp., 359 ill., 4 colors	$ 7.95
Slide set (225 2x2 slides)	125.00

UNDERSTANDING ELECTRICITY AND ELECTRICAL TERMS

AAVIM
Engineering Center
Athens, Georgia 30602, 1975

Here is an opportunity for everyone to become acquainted with one of the primary forms of energy. Learn how it works. Become familiar with such terms as: volts, amps, ohms, watts, and kilowatt-hours. Read meters. Interpret electric energy bills. Written in simple language and well illustrated to provide an elementary text for a wide range of students in all areas of vocational education.

Manual (48pp., 83 ill., 4 colors)	$ 3.95
Slide set (88 2x2 slides)	44.00
Transparency masters	7.95

USE OF COLOR IN FARM MECHANICS SHOP AND ON EQUIPMENT

NASCO
Fort Atkinson, Wisconsin 53538

Colors and tints are shown and illustrate the need for color and its uses in the shop. Recommendations for colors to use in specific applications are made in Part II.

Filmstrip, Part I	$6.00
Filmstrip, Part II	6.00

USE OF THE LEVEL: Reading the Rod

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

Eyepiece views of the rod take the student step-by-step to the point of making the first reading in the field. The 39 frames include a recap of methods of setting up the instrument and focusing it, and make teaching this difficult subject much easier. Recommended for use with following filmstrip.

Silent filmstrip	$9.00

USE OF THE LEVEL: Setting up the Instrument

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

The basics of surveying are made easy in this 43-frame filmstrip. Your students will be introduced to common uses of the surveying level, procedures for setting up the instrument and steps in leveling, adjusting and focusing. Complete nomenclature is included as well.

Silent filmstrip	$9.00

WEIGHTS AND MEASURES

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

Common weights and measures are featured in this set of 18 overhead transparency masters with eight overlays, which serve as a helpful introduction to the VEP surveying filmstrips. Units such as the span, cubit, circular measurement, horse measurement, and chain measurement are included.

Transparency masters	$2.00

ANNUALS

Ohio Agricultural Education
Curriculum Materials Services
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A series of 79 color slides and related script identifying and describing 58 annuals used for landscaping. In addition, the script describes the habit of growth, propagation, culture, flower, and habitat. An alphabetical index of common and botanical names is included. (1977)

Slides and script	$15.80
Script only	1.00

BROADLEAVED EVERGREENS FOR THE LANDSCAPE

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio

A series of 52 slides and script describing 11 broad-leaved evergreens recommended in landscape settings. The script also describes additional cultural characteristics and uses of the plants. (1977)

Slides and script	$11.40
Script only	.75

BUDDING AND GRAFTING

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

Close-up photographs take your students step-by-step through the fundamentals of budding and grafting fruit trees. This 61-frame sound filmstrip features cleft grafting, bark grafting, T-budding, and several variations.

Sound filmstrip	$13.50

CONTROLLING PESTS OF ORNAMENTAL PLANTS

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

The ability to control insects, weeds and disease pests of ornamentals is an essential skill for horticulturists. Your students will be introduced to the safe use of chemical controls, biological and mechanical methods, equipment, clothing and clean-up procedures.

Sound filmstrip	$13.50

CUT FLOWERS

Ohio Agricultural Education
Curriculum Materials Service
The ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A series of 31 color slides and related script identifying and describing 30 cut flowers commonly used in the florist trade. The script describes the flower, habit of growth, propagation, culture, habitat, and major source of production. An alphabetized index of botanical and common names is included. (1977)

Slides and script	$6.80
Script only	.75

DECIDUOUS SHRUBS FOR THE LANDSCAPE

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A series of 77 slides and script describing 20 deciduous shrubs recommended in landscaping. The slides show some of the major identifying characteristics of each plant, its parts, and how it appears in landscape settings. The script also describes additional characteristics and uses of the plants. (1977)

Slides and script	$16.20
Script only	.75

DESIGN GREENS

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A series of 29 color slides and script which identify and describe 28 design greens. The script describes the habit of growth, flower, propagation, culture, habitat, and major source of supply. An alphabetized index of botanical and common names is included. (1977)

Slides and script	$6.70
Script only	.75

DISEASES OF LANDSCAPE ORNAMENTS

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A series of 81 slides and illustrated script. A combination of close-up and long shots are used to help students identify the common diseases encountered in landscape plants. The script also describes the characteristics of the diseases and general methods of control. Appendix of the script includes an evaluation of the severity of the damage from each of the diseases. (1978)

Slides and script only	$16.80
Script only	1.00

DRIED MATERIALS

Ohio Agricultural Education
Curriculum Materials Service
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A series of 71 slides and illustrated script show some of the favorite materials used in dried arrangements. The script presents the botanical as well as common names for the materials. The materials are organized into four groups according to their most common use in arrangements: line, form, focal, or filler materials. Also shown are various containers and examples of finished arrangements. (1978)

Slides and script	$14.90
Script only	1.00

ELEMENTS OF PRUNING

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

Pruning, like other forms of maintenance, can improve the general health and appearance of ornamental plants. Give your students a detailed look at the proper location of pruning cuts, the correct use of tools, major categories of pruning and design considerations for the natural form of the plant.

Sound filmstrip	$13.50

ENVIRONMENTAL INJURIES TO LANDSCAPE PLANTS

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A series of 80 color slides and related script illustrates the characteristic signs of physical and chemical injuries along with nutritional and weather-related disorders of landscape plants. (1977)

Slides and script	$16.80
Script only	.75

FERTILIZING ORNAMENTAL PLANTS

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

Beginning with the concept that the soil is a reservoir of plant nutrition, your students learn the effects of soil aeration, moisture content, structure, pH,

and parent material on the availability of nutrients. Common symptoms of nutrient deficiency along with all types of fertilizers are also explained.

Sound filmstrip $13.50

FLORICULTURAL CROPS

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Roome 254
2120 Fyffe Road
Columbia, Ohio 43210

A series of 60 color slides and script introduce vocational horticulture students to the major floriculture crops produced in the United States today. Individual crops are discussed briefly as to type and varieties available, some of the specific cultural requirements, and the uses of the plants by the ultimate consumer. (1966)

Slides and script $13.20
Script only .75

FLOWER ARRANGING

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A series of 103 slides and illustrated script made up of 5 basic flower arrangements: symmetrical, asymmetrical, right angle, colonial, table or centerpiece and a bud vase. Each of the five arrangements shows the complete process for creating the arrangement, beginning with selection of materials and finishing with tagging and watering the completed arrangement. Minute steps of arranging are illustrated in close-up form. (1978)

Slides and script $21.60
Script 1.00

FLOWER ARRANGING: Beginning Techniques

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

Help your students learn to arrange flowers like the professionals! They'll be introduced to various types of flowers and mechanical aids used in flower arranging, and they'll learn the basic design principles and proper care of blossoms after cutting (86 frames).

Sound filmstrip $14.50

FLOWERING POTTED PLANTS

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A series of color slides and related script identifying 33 flowering potted plants. The script describes the habit of growth, flower, propagation, culture, habitat, and major source of supply. An alphabetized index of botanical and common names in included.

Slides and script $7.50
Script only .75

FLOWERING SHRUBS

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A series of 84 slides and illustrated script which is not intended to be a complete compilation of all available flowering shrubs. Most of the plants shown are rather common with a few that are not used so often. The slides show how to identify the shrub by the leaf, flower, fruit, fall color (if worthy of mention), and the winter dormant bud. The series is designed to help the horticulture instructor when plants are not available or are out of season. (1972)

Slides and script $17.60
Script only .75

FOLIAGE PLANTS

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A series of 75 slides and script describing the major identifying features of 72 foliage plants. Plants are listed in the script and a suggested phonetic pronunciation of the botanical names is included. The script includes a chart of the general characteristics and cultural requirements of 43 plants or related plant groups including: plant usage, light, water and fertilizer requirements, temperature, humidity, disease, and propagation. (1977)

Slides and script $15.70
Script only 1.50

FUNDAMENTALS OF PLANT INDENTIFICATION

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A set of student worksheets designed to familiarize students with the important identifying characteristics of plants. The worksheets should be used with the slide series of the same name and become a part of the student's notebook. 16 pages. (Revised 1971)

Student Manual $.40

A series of 15 color slides and script which illustrate by means of sketches the important identifying characteristics of plants.

Slides and script $3.40

GERANIUM

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A series of 50 color slides and illustrated script including the following sections: Geranium Varieties, Geranium Propagation, Geranium Potting, Geranium Commercial Production, and Geranium Uses. The slides may be used when working with the geranium in the school greenhouse or with the student's occupational experience program.

Slides and script $11.00
Script only 1.00

GREENHOUSE SKILLS

Career Aids, Inc.
8905 Lurline Avenue, Dept. T-4
Chatsworth, California 91311

These six multi-media programs provide dozens of procedures for maintaining good plant health and growth. Each includes: color filmstrip, matching set of 35mm slides, cassette, student workbook.

How To Plant Seedlings $40.00
Preparing soil mix, two methods of planting, germinating seeds, obtaining seedlings.

How To Transplant Seedlings into Flats $40.00
Preparing soil mix, transplanting into flats, moisture.

How To Transplant Seedlings From Flats to Pots $40.00
Transplanting variety of plants, proper humidity and light.

How To Water Greenhouse Plants $40.00
Watering, measuring soil moisture, optimum humidity.

How To Fertilize Greenhouse Plants $40.00
Dry or liquid fertilizers, application, over/under fertilizing.

How To Recognize and Control Common Greenhouse Pests $40.00

Identifying and preventing aphid, scale, mealybug, white flies, mites, bacteria, viruses, fungi.

GREENHOUSES AND RELATED STRUCTURES

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A series of 62 color slides and script. The objective of this slide series is to familiarize students with the various kinds of greenhouse structures and facilities. The slide series is divided into sections and the sections can be viewed at different times with the class. The sections are as follows: Greenhouses, Uses of Greenhouses, Greenhouse Shapes, Covering Materials, Greenhouse Heating, Ventilating and Cooling, and Related Structures. (1967)

Slides and script	$13.60
Script only	.75

GROUND COVERS AND HEDGES FOR THE LANDSCAPE

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State Univeristy
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A series of 39 slides and script describing 11 ground covers or hedges recommended in landscaping. The slides show major identifying characteristics of each plant, its parts, and how it appears in landscape settings. The script also describes additional cultural characteristics and uses of the plants. (1977)

Slides and script	$8.60
Script only	1.00

GROWING MEDIA FOR ORNAMENTAL PLANTS

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 94307

With this important VEP production, you can help your students become better acquainted with all types of commonly used soil amendments. Nitrogen tie-up is discussed thoroughly, as well as the materials which cause this condition. Serves as excellent introductory material for class discussion and work experience.

Sound filmstrip $13.50

INSECT AND INSECT-LIKE PESTS OF LANDSCAPE ORNAMENTALS

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A series of 140 color slides and related script developed to assist students of ornamental horticulture in identifying the more common pests and the damage they do. Close-up photography is used to help the learner visually study the micro aspects of these pests as encountered by workers in the landscape. The series is organized by major types of pests and their classification order. (1978)

Slides and script	$28.00
Script only	1.30

LANDSCAPE DESIGN

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A series of 187 color slides and illustrated script arranged in 4 sections as follows: Some Principles and Concepts,

Site Analysis, The Public Area, and The Private Area. The series presents the type of work that is done by landscape designers and some of their job skills. The slides show landscaping situations and practices correlated to check lists and suggested student activities listed in the script. (1976)

Slides and script	$35.50
Script only	3.00

LANDSCAPING THE HOME & SCHOOL GROUNDS

Vocational Education Media Center
10 Tillman Hall, Clemson University
Clemson, South Carolina 29631

Considerable interest has been generated in improving and beautifying home and school grounds. Since the majority of students may participate, this instruction will provide desirable work experience for the student. There are 40 transparencies with paper copies in the set.

Student manual	$3.00
Transparencies	7.50

LAWN CARE AND MANAGEMENT

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A series of 46 color slides and illustrated narration dealing with the following areas of lawn management: seed selection, fertilization, mowing, weed control, disease control, watering, and thatch control. (1972)

Slides and script	$10.10
Script only	.50

LAWN MOWER SAFETY

The Farm Film Foundation
Suite 424 - Southern Building
1425 H Street, N. W.
Washington, D. C. 20005

Operation of a rotary lawn mower calls for certain common-sense precaution it says---and shows---here.

Film, 9½ min. FREE LOAN

LAWN RENOVATION AND REESTABLISHMENT

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A series of 61 color slides and illustrated narration. The slides and narration are intended to aid in making a decision as to the type of renovation needed, the factors to consider for turf reestablishment, and the choice of turf for a specific location. (1978)

Slides and script	$13.45
Script only	1.00

LAWNS AND GROUND COVERS

Vocational Education Prodcutions
California Polytechnic State Univ.
San Luis Obispo, California 93407

Observe the installation of a lawn from preliminary decision making to actual planting with this presentation. A step-by-step sequence of photographs will take your students through the landscaping of a home, including special environmental considerations.

Sound filmstrip $13.50

THE MAPLES

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A series of 60 slides and script describing 14 species of maples used in landscaping. The slides show some of the major identifying characteristics of these trees: leaf, samaras, twig, buds and flowers, and tree size and

shape. The script also describes the habitats, method of propagation, and cultural characteristics of the various species. (1977)

Slides and script	$13.20
Script only	.90

MORPHOLOGY OF GRASSES

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

Important agricultual grasses are examined in this study set that includes 22 overhead transparency masters with nine overlays. An eight-page glossary discusses the material presented on each plate. Some overlays in the set are designed for testing and review purposes. All plates can be used to make spirit-duplicator masters as well as transparencies.

Transparency masters	$2.50

NARROW-LEAVED EVERGREENS FOR THE LANDSCAPE

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A series of 58 slides and script which describes 15 narrow-leaved evergreens which are generally recommended in landscaping. The slides show some of the major identifying characteristics of each plant, its parts, and how it appears in landscape settings. The script also describes additional cultural characteristics and uses of the plants. (1977)

Slides and script	$12.80
Script only	.75

ORNAMENTAL HORTICULTURE

Continuing Education Publications
P.O. Box 1491
Portland, Oregon 97207

The following booklets and slide sets were developed and completed by community college teachers. The booklets are as follows:

Plant Propagation	$.60
Weed Identification and Control	.60
Ornamental Plant Indentification	.28
Identification & Control of Insects, Diseases & Other Plant Pests	.60
Horticultural Mechanics	.60
Horticultural Equipment, Operation & Maintenance	.60
Landscape Maintenance	.60
Introduction to Landscape and Nursery Management	.60

The slide sets are as follows:

Ornamental Plants (476 slides)	$160.00
Evergreens & Shrubs (414 slides)	135.50
Rhododendrons (289 slides)	97.50
Tools (156 slides)	50.00

ORNAMENTAL HORTICULTURE KIT

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

This comprehensive series of six filmstrips covering all facets of ornamental horticulture, combines full-color photographs, illustrations, and no-nonsense narration to make one of the most valuable teaching aids available. In addition, a complete set of ditto test masters, ready for duplication, will quiz your students on each of the topics covered (tests not available separately).

Complete kit	$59.00

PERENNIALS

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A series of 77 color slides and related script identifying and describing 65 perennials used in the landscape. The script describes the habit of growth, propagation, culture, flower, and habitat. An alphabetized index of common and botanical names is included. (1977)

Slides and script	$15.40
Script only	1.00

PLANT IDENTIFICATION: Annuals, Perennials, House Plants

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

The most common species of house plants are pictured in this 78-frame filmstrip. A taped narration assures correct pronunciation of Latin names, and reference section in the illustrated script gives complete information on care of the plants included in the filmstrip.

Sound filmstrip	$15.50

POINSETTIAS

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A series of 43 color slides and illustrated script including the following sections: Sex of Flower, Varieties, Propagation, Potting, Photoperiodism, and Commerical Production. The slides may be used when working with the poinsettia in the school greenhouse or with the student's occupational experience program. (1971)

Slides and script	$15.70
Script only	1.00

PROPAGATING ORNAMENTAL PLANTS

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

The ability to propagate healthy, vigorous plants is a basic skill for anyone wishing to enter upon a career in ornamental horticulture. This sound filmstrip demonstrates grafting, budding, layering, and various kinds of division, as well as discussing special growing media, soil sterilization, germination and transplanting temperatures.

Sound filmstrip	$13.50

PRUNING OF LANDSCAPE ORNAMENTALS

Ohio Agricultual Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A series of 81 slides and illustrated script. The series includes the purposes of pruning, pruning equipment, types of pruning, and a "how to" approach to pruning evergreen and deciduous landscape plants. (1978)

Slides and script	$17.00
Script only	1.00

ROTARY MOWER SAFETY

Vocational Education Media Center
10 Tillman Hall, Clemson University
Clemson, South Carolina 29631

This set of four transparencies includes speed of the blade, impact of the blade at two different speeds, and the amount actually cut by the blade at walking speed.

Transparencies	$1.25

SHADE TREES FOR THE LANDSCAPE

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A series of 65 slides and script describing 14 shade trees recommended in landscaping. The script also describes additional cultural characteristics and

uses of the plants. (1977)

Slides and script	$14.30
Script only	.75

SMALL TREES FOR THE LANDSCAPE

Ohio Agricultural Education
Curriulum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Clumbia, Ohio 43210

A series of 57 slides and script describing 11 small trees recommended in landscaping. The slides show identifying characteristics of the flowers, twig, leaf, and tree shape or size, and how the plants appear in landscape settings. The script also describes additional cultural characteristics and uses of the plants. (1977)

Slides and script	$12.50
Script only	.75

SHRUBS FOR LANDSCAPING, IDENTIFICATION CULTURE, USE

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

This publication is designed to provide a simple key for 32 shrubs commonly used for landscaping in Ohio. 110 pages. (Revised 1972)

Student manual	$2.75

TERRARIUMS AND HOW TO MAKE THEM

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

Sixty frames of full color detail each step in the preparation, planting and care of a bottle garden. Especially helpful is an introduction to varieties of plants, with careful consideration to their light, temperature and moisture needs. Terraniums are popular hobby items, but your students will find them a valuable learning experience as well.

Sound filmstrip	$13.50

TURF DISEASES OF THE MIDWEST

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A series of 76 color slides and related script which identifies and describes 16 diseases and several nondisease causes of turf injury. The slides show how the injuries appear in the lawn setting as well as close-up views. Specific identification techniques are described along with general means for controlling the disease. (1977)

Slides and script	$15.20
Script only	.75

VIBURNUM

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A series of 48 color slides and illustrated script. The series shows 14 of the some 90-plus species and varieties of the viburnums which are grown in landscapes and readily available in nurseries. An overall view of the plant is shown along with the flowers, fruit, and dormant winter bud. (1972)

Slides and script	$10.60
Script only	.75

WHAT IS HORTICULTURE?

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

A completely revised and expanded slide set replaces one with the same name. The set of 59 slides and illustrated script deal with the nature of the occupational areas of floriculture, fruits and vegetables, garden centers, and landscaping and turf. Characteristics of vocational training programs and related FFA activities for these occupational areas are presented. (1976)

Slides and script	$13.00
Illustrated narration only	.75
Slides with narration and cassette	16.00
Cassette only	3.00

AIR AND THE AGRICULTURAL ENVIRONMENT

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

Sometimes forgotten in the public concern over the effects of air pollution on humans is the effect of air pollution on the plants we raise for food. Easily understood drawings and diagrams trace the causes of air pollution, and full-color photographs document its effects on the agricultural environment. (48 frames)

Sound filmstrip $13.50

EARTH IS THE LORD'S

The Farm Film Foundation
Suite 424 - Southern Building
1425 H Street, N. W.
Washington, D. C. 20005

Soil conservation as a moral and spiritual part of religion.

Film, 14 min., color FREE LOAN

ECOLOGY AND AGRICULTURE

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

The award-winning series of five live sound filmstrips presents exciting full color photography and shows students how man's food supply depends upon a vast planetary ecosystem. Also included are overhead transparencies and teacher's guide.

Complete series $65.00
Transparency set 3.60

ECOLOGY AND THE AGRICULTURAL ENVIRONMENT

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

This introductory filmstrip to the series gives the students an overview of the relationship among the basic agricultural elements of the earth---soil, air and water---the balance of nature, and the preservation of the elements through conservation. (49 frames)

Sound filmstrip $13.50

FOREST TECHNOLOGY

James W. Hargis, Coordinator
Curriculum/Instructional Materials
942 Lancaster Drive, N. E.
Salem, Oregon 97310

The following slide-tape programs developed by Forest Technology instructors serve as a useful tool of instruction in any forestry class: Five Major Silvicultural Systems; Understanding Depth Perception, Explanation of Stereovision; Explanation of Magnetic Declination; Scale Determination on Aerial Photos; Intro. to Forest Fuels; Intro. to Timber Cruising; How to Use a Biltmore Stick; Understanding Proper Photo Coverage; Measuring Distances on Aerial Photos; Shelterwood System of Harvesting; Intrc. to Log Scaling and Grading; Grading Douglas Fir Saw Logs-West Side; Grading Douglas Fir Peeler Logs-West Side; Prelim. Preparation and Orientation of Aerial Photos; Aligning Aerial Photos for Optimum Stereoscopic Vision; Log Scaling, East Side Rules; Length Defect Deduction; Log Scaling, West Side Rules; Long Log Length Cuts.

Slide set w/cassettes
In Oregon $21.75
Elsewhere 23.95

GAME BIRD MANAGEMENT, Part I

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

Game Bird Management, Part I introduces the student to game bird raising as a project and as a potential career. This full-color sound filmstrip discusses the origins and importance of varieties of upland game birds---all of which are suitable for student projects. (54 frames)

Sound filmstrip $13.50

1.17

GAME BIRD MANAGEMENT, Part II

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 94307

Game Bird Management, Part II adds details to the information presented in Part I and discusses artificial brooding of game birds, proper lighting, spacing, disease control, and the economics of mass production. Full color photographs illustrate types of equipment used in raising game birds. (60 frames)

Sound filmstrip $13.50

INTRODUCTION TO IRRIGATION

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

Whether your students are would-be farmers or home gardeners, this presentation explains the basics they'll need to know about irrigation---the method of irrigation, the amount to be applied, and the extent of moisture deficiency in the soil. An excellent review for advanced students, too!

Silent filmstrip $9.00

IRRIGATION, Part I: Survey of Methods
IRRIGATION, Part II: Choosing a Method

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

Meet Farmer Frank, VEP's new hired hand---our latest cartoon character makes teaching irrigation easier! In Part I, he talks about methods, and shows you everything from sprinklers to subirrigation in 49 colorful frames.

In Part II, Frank explains the factors in selecting an irrigation system: soil, crop, topography, climate, labor and economics. Part II also shows the important relationship between external limitations listed and the limitations of the irrigation system. (56 frames)

2 Sound filmstrips $22.50

MANAGING WILDLIFE

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

Growing concern for our environment has encouraged interest in careers in wildlife management. This award-winning production looks in depth at the basic principles of game management, as well as briefly reviewing the history of wildlife conservation in America and its impact on today's attitude toward game species.

Sound filmstrip $13.50

PEOPLE AND THE AGRICULTURAL ENVIRONMENT

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

Much of man's concern about ecology and agriculture is centered around his own need to survive on a planet swarming with the human race. This 49-frame filmstrip is the concluding segment of the series and reviews the information and visuals presented in the preceding filmstrips. It summarizes ways in which we must protect our water, soil and air in order to stay alive.

Sound filmstrip $13.50

PLANNING FOR AN IRRIGATION SYSTEM

AAVIM
Engineering Center
Athen, Georgia 30602, 1971

Developed especially for the student who plans to work in agriculture or agribusiness related to irrigation. To prepare the student for making such decisions as the following:

- effect of irrigation on crop production
- how much water is needed?
- how much water is available?
- what type of irrigation system to use?
- how much will it cost?
- how much profit can be expected?

Manual (112 pp., 196 ill.) $ 6.75
Slide set (213 2x2 slides) 97.00

RELATIONSHIP OF HARDWOOD LOG AND LUMBER GRADES

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbia, Ohio 43210

This series of 58 slides and script are designed to show the relationship that exists between the National Hardwood Lumber Association Rules for the Measurement and Inspection of Hardwood Lumber and U.S. Forest Service Grading Rules for Factory Grade Hardwood Logs. The series is divided into 3 sections: basic lumber grading terms and rules that need to be understood before discussing the relationship of log and lumber grades, grading the log face, and example slabs and jacket boards to establish the relationship. (1968)

Slides and script	$12.80
Script only	.50

SOIL AND THE AGRICULTURAL ENVIRONMENT

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

In this detailed examination of soil's part in man's survival, students see and hear the fascinating story of how soil is formed over millions of years and how it can be destroyed in a few days or hours through carelessness. (47 frames)

Sound filmstrip	$13.50

SOIL CLASSIFICATION AND TREATMENT

Vocational Education Media Center
10 Tillman Hall, Clemson University
Clemson, South Carolina 29631

This publication is designed to provide the student with a workable knowledge of soils and a better understanding of soil and water management problems. Major topics include: (1) Factors to Consider in Classifying Soils, (2) Land Capability Classes, (3) Land Use and Treatment, (4) Soil and Water Conservation Plan, and (5) The FFA Soil Judging Contest. Accompanying the publication of "Soil Classification and Treatment" is a set of 41 overhead projection transparencies. Topics covered include texture, subsoil permeability, depth of surface soil and subsoil, land use, recommended land treatments, soil and water conservation plans and land judging.

Booklet	$1.00
Transparencies	7.75

TECHNIQUES IN LAND PREPARATION

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

Two sound filmstrips combine to make this set an excellent introduction to modern methods of preparing land for row crop production. The first, "Seedbed Preparation", highlights the basics of establishing a good seedbed in 50 frames. The second, "Bed Maintenance", uses 68 frames to show considerations such as preirrigation and fertilizers, with special emphasis on discing patterns.

2 Sound filmstrips	$21.00

TREE IDENTIFICATION

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

Full-color slides, overhead transparency masters and an illustrated manual combine to make this kit a valuable teaching aid. It features ten important western conifers; slides include detailed close-ups of the trees, plus the common and Latin names of the species. A duplicate set of slides omits the names and can be used for testing. Overhead transparency masters illustrate each species.

Slide set	$9.60

WATER AND THE AGRICULTURAL ENVIRONMENT

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

Surprisingly, the available fresh water in the agricultural environment is only one percent of all the water on earth. Yet, as students learn in this presentation, all human life depends upon that tiny fraction of the planet's water supply. Special emphasis is given to farming the oceans and estuaries. (46 frames)

Sound filmstrip $13.50

WATER POLLUTION

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

The causes of water pollution, and its effects, are dramatically presented in this sound filmstrip. The history of water pollution is discussed, as well as its sources: sewage, factory wastes, agricultural chemicals and soil erosion. The filmstrip provides a powerful stimulus for class discussion. (59 frames)

Sound filmstrip $13.50

WATERSHED MANAGEMENT

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

The role of good watersheds in a productive and livable environment is examined here. The sources, development and conservation of watersheds are explained and the perspectives presented will benefit students of agriculture, and anyone concerned with the preservation of our natural resources. (56 frames)

Sound filmstrip $13.50

CAREERS IN AGRICULTURAL BUSINESS AND SERVICE

Ohio Agricultural Education
Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe
Columbia, Ohio 43210

This series of 58 slides and script describes the nature of the jobs in the areas of agricultural business supplies and service. The series also describes the nature of the vocational training program which prepares workers for entry level employment in these agricultural occupations. The slides and script are intended for teachers of vocational programs with students early in the program, for occupational exploration and orientation programs in the prevocational years, and for those persons responsible for occupational guidance and administration of vocational education programs. (1977)

Slides and script	$12.80
Script only	.75
Slides, script, and cassette	15.50
Cassette only	3.00

CAREERS IN AGRICULTURAL PRODUCTION

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

If your students properly prepare, through education and work experience, they may find a place for themselves in production---an immense part of the industry encompassing crop, poultry, dairy and livestock farming and horse production. This new filmstrip gives your students a thorough description of the education and skills necessary to enter the field, as well as kinds of jobs they can hope to find, including advancement possibilities.

Sound filmstrip $13.50

CAREERS IN AGRICULTURAL RESOURCES

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

Managing America's resources is an increasingly important agricultural industry. Your students will be introduced to the wide variety of career opportunities available in fisheries management, outdoor recreation, soils, and range, water and wildlife management. The filmstrip explores work settings, entry requirements and much more.

Sound filmstrip $13.50

CAREERS IN AGRICULTURAL SUPPLIES AND SERVICES

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

America's shrinking farm acreage demands more efficient management, from animal nutrition to fertilization. This is an enormous task made possible by the skills and knowledge of an ever-growing number of specialists in the field of supplies and services. Whether your students are interested in feeds, fertilizers, seeds or chemicals, they'll find a wide variety of careers presented in this new filmstrip.

Sound filmstrip $13.50

CAREERS IN AGRICULTURE

Pathescope Education Media, Inc.
71 Weyman Avenue
New Rochelle, New York 10802

Careers in agriculture describes the importance and scope of agriculture in America today, examining the wide variety of jobs from work on the farm to jobs in agricultural industry or business, and government jobs dealing with farms, farmers, and related businesses. Interviews with farmers show the great variety of farm types and demonstrate typical farm activities, rewards and drawbacks,

personality traits desirable for farm life. Other interviews disclose many other possibilities in agriculture——the expanding field of the professional farm manager, the grain handler, sales and other positions in business or industry dealing with agriculture, farm equipment maintenance, harvesting services, and the governmental positions including the county agents and extension personnel.

Part Two outlines personal qualifications, skills and aptitudes, training or further education required in these various areas——many of which do not require college degrees. Specific suggestions discuss how students in urban and suburban, as well as rural areas, can work in agriculture-related jobs while still in high school – on-the-farm summer jobs, in pet stores or clinics, in food processing plants.

Sound filmstrip $46.00

CAREERS IN ENVIRONMENTAL PROTECTION

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

Two hundred years of urbanization and industrialization have led to increasing degradation of the water we drink and the air we breathe. It's predicted that over one million people will be needed in the job areas of water and wastewater treatment and air pollution control by 1980. This filmstrip will help inform your students of the education and skills necessary to enter this expanding field.

Sound filmstrip $13.50

CAREERS IN FORESTRY

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

American forests are a natural heritage which provide a source of recreation, building materials, water, paper, and more. Careers in forestry, as this filmstrip points out, span areas including forest establishment, forest protection, logging, harvesting and transporting, wood utilization and Christmas trees. Students who like the outdoors will be especially interested in this production.

Sound filmstrip $13.50

CAREERS IN ORNAMENTAL HORTICULTURE

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

Ornamental horticulture is a dynamic, multi-million dollar business, requiring the talents of specialists in arboriculture, floriculture, landscaping, nursery and turf. This filmstrip will help your students learn the wide range of careers available, and better understand current trends that will influence tomorrow's job outlook.

Sound filmstrip $13.50

DYNAMIC CAREERS THROUGH AGRICULTURE

The Farm Film Foundation
Suite 424 - Southern Building
1425 H Street, N. W.
Washington, D. C. 20005

In its modern dress, more dynamic than ever.

Film, 28 min. FREE LOAN

LEADERSHIP FOR AGRICULTURAL INDUSTRY

Gregg/McGraw-Hill
1221 Avenue of the Americas
New York, New York 10020, 1978

To help students successfully enter and advance in an agricultural career, this text stresses the importance of developing leadership skills. It deals extensively with the Future Farmers of America as a vehicle for developing and applying leadership competencies.

Text (144 pages)	$ 4.64
Activity guide	2.60
Transparency masters	5.00
Teacher's manual and key	2.50
Set package (5 texts, 5 activity guides, 1 set trans. masters, 1 teacher's manual and key and 1 sound filmstrip)	61.95

LEARNING THROUGH EXPERIENCE IN AGRICULTURAL INDUSTRY

Gregg/McGraw-Hill
1221 Avenue of the Americas
New York, New York 10020, 1978

The importance of gaining work experience as preparation for careers in agricultural industry is thoroughly discussed in this text. Examples are given of the four supervised occupational experience programs available as part of vocational agricultural education.

Text (160 pages)	$ 4.64
Activity guide	2.80
Transparency masters	5.00
Teacher's manual and key	2.50
Set package (5 texts, 5 activity guides, 1 set transparency masters; 1 teacher's manual and key, and 1 sound filmstrip)	$61.95

A NEW LOOK AT CAREERS IN AGRICULTURE

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

VEP has revised its award-winning filmstrip series, and developed a kit of eight all-new filmstrips on careers in agriculture which parallel recently established HEW curriculum guidelines. Your students will learn the most up-to-date information available. New technology has increased opportunities in many areas, and employment qualifications and outlooks are realistically discussed.

Complete series $80.00

WORKING IN AGRICULTURAL INDUSTRY

Gregg/McGraw-Hill
1221 Avenue of the Americas
New York, New York 10020, 1978

This text provides an overview and introduction to agricultural industry which consists of production agriculture and agribusiness. The historical development of agricultural industry is covered, as is the economics of running an agribusiness. The text combines vocational skills and career awareness based on the philosophy of expanded career options resulting from a broadened definition of agriculture.

Text (144 pages)	$4.64
Activity guide	2.60
Transparency masters	5.00
Teacher's manual and key	2.50
Set package (5 texts, 5 activity guides, 1 set transparency masters, 1 teacher's manual and key, and 1 sound filmstrip)	$60.00

YOUR CAREER IN AGRICULTURE

Instructional Materials Laboratory
10 Industrial Education Building
University of Missouri-Columbia
Columbia, Missouri 65211

The slide series contains 90 slides in full color promoting the future careers in agriculture. Includes the following: importance of agriculture, products, mechanics, teaching, supplies, resources, ornamental horticulture, production and forestry.

Slide set $31.00

CAREERS IN AGRICULTURAL PRODUCTS

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

The food processing industry is one of the nation's largest...and as diverse as the 8,000 or more food products found in a modern supermarket. This filmstrip takes a close look at the variety of opportunities available, at the entry level and advancing into management, in the industry branches of meat, poultry, dairy, fruits and vegetables.

Sound filmstrip $13.50

AGRICULTURE AND SOCIETY

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

This five-part series of filmstrips will help put agriculture and its importance into perspective. As a result, students of agriculture will have a better idea of their niche in society; urban students will gain a new awareness of the people who grow their food and fibre.

Filmstrips (complete set) $60.00

AGRICULTURE EDUCATION TRANSPARENCIES

Career Aids, Inc.
8450 Lurline Avenue, Dept T-4
Chatsworth, California 91311

Full 8½" x 11" multi-colored transparencies, each with a variety of colors and most with overlays.

Group I: Agriculture Education Explained——Agriculture Defined, Careers, Vocational Agriculture, Vo-Ag-Shop, Work Experience, FFA, Summary.
8 transparencies $48.25

Group II: Soil Fertilizers, and Pesticides——Soil and Plant Life, Know Your Soil, Profile, Land Management, Test!, Soil pH, Essential Plant Nutrients, Nutrient Deficiencies, Lime, Pesticides, Pesticide Types and Application, The Question of Pesticide Use.
14 transparencies $69.25

Complete Set (22 multi-colored transparencies with 28 overlays) $112.50

AGRICULTURE IN THE FUTURE

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

Without claiming to have access to a crystal ball, experts are making some surprising predictions about the future of farming. Perhaps most surprising is the fact that many revolutionary techniques are already being employed on an experimental basis to improve the output and quality of present-day agriculture. Animal and plant genetics play an important part in the future of agriculture and many of the greatest discoveries take place in the test tube rather than the furrowed field. (80 frames) SF $13.50

AGRICULTURE IN THE UNITED STATES

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

Agricultue is big business and a way of life for millions of farm families across the nation. The importance of these people in providing for the basic requirements of society is told here. The many changes brought on by improved technology and economics are depicted in all parts of the country. The trend toward incorporation by family enterprises is discussed, too. (78 frames)

Sound filmstrip $13.50

AGRICULTURE IN THE WORLD

Vocational Education Productions
California Polytechnic State Univ.
San Luis Obispo, California 93407

Billions of people, billions of acres, and neither is evenly divided anywhere in the world. This means some nations feast while others suffer famine. America's role in feeding the world, as well as the role other nations play in feeding themselves are both important subjects for discussion. Photographs from many foreign lands depict their methods of raising food and make this presentation valuable in geography and social science classes as well as agriculture. (79 frames)

Sound filmstrip $13.50

AGRICULTURE, RESEARCH AND YOU

The Farm Film Foundation
Suite 424 - Southern Building
1425 H Street, N. W.
Washington, D. C. 20005

Thought-provoking presentation of ag research problems.

Film, 28 min., color FREE LOAN

BREAD FOR BREAKFAST

The Farm Film Foundation
Suite 424 - Southern Building
1425 H Street, N. W.
Washington, D. C. 20005

Beautiful shots of the Philippines where bread is moving in.

Film, 10 min., color FREE LOAN

CHANGING COWBOY

The Farm Film Foundation
Suite 424 - Southern Building
1425 H Street, N. W.
Washington D. C. 20005

Traces the development of the cowboy and his relationship to the handling of cattle from the early days to the present——accent on present.

Film, 27 min., color FREE LOAN

EIGHT-DAY YEAR

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PERIODICALS AND JOURNALS

SOURCES OF INFORMATION

Periodicals and journals can be valuable sources of information for the classroom teacher. The following is a listing and description of periodicals related to agriculture. One should examine this list to pinpoint publications which can be of use for instructional and research purposes.

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FREE MAGAZINES SECTION

Some of the listings are followed only by a reference to: "See the Free Magazines Section." For further information on these periodicals, obtain a copy of Magazines for Libraries and refer to the Free Magazine Section therein.

AGRICULTURE

Basic Periodicals

Ejh: *National 4-H News;* Hs: *National Future Farmer;* Ga: *Countryside, Farm Journal, Successful Farming;* Ac: *Agriculture History, American Journal of Agricultural Economics, Ceres, Crops and Soils, Farm Journal, Successful Farming.*

Library and Teaching Aids

Agricultural Education Magazine, National 4-H News.

Basic Abstracts and Indexes

Bibliography of Agriculture, Biological Abstracts, Biological and Agricultural Index.

Introduction

Journals in agriculture range from general farming journals to those on raising specific crops or livestock. Some journals encompass all parts of the world, while others discuss the agriculture of a specific country or, in the United States, a particular state or region. Magazines that stress particular problems and types of farming or ranching in a given area include *Alabama Farm Bureau News, Hoosier Farmer,* and *Wyoming Stockman Farmer.* Libraries should check *Ulrich's International Periodicals Directory* for regional publications of interest.

In addition to journals published by societies, universities, individuals, and publishing houses, libraries should subscribe to government publications. Both the Canadian and the U.S. departments of agriculture publish journals—many of which are free—on various aspects of agriculture. The United States Department of Agriculture Economic Research Service issues a number of quarterlies with titles such as "Vegetable Situation," "Poultry and Egg Situation," "Wheat Situation," etc., which give current information on specific areas of U.S. agriculture.

As world hunger, world food supply, and natural resources become greater concerns, some journals go beyond the problems of crop raising and marketing. *Ceres* (an FAO publication), *War on Hunger* (U.S. Department of State), *Foreign Agriculture* (U.S. Department of Agriculture) and *World Crops and Livestock* (World Crops Publications, Ltd.), to name a few, discuss agriculture in terms of feeding a hungry world. (J.E.M.)

Agricultural Economics Research. 1949. q. $3.85. E. Lane & A. B. Paul. Economic Research Service, U.S. Dept. of Agriculture, Supt. of Docs., U.S. Govt. Printing Office, Washington, D.C. 20402. Illus., index. Circ: 1,000. Vol. ends: Oct. Microform: UMI.

Indexed: BibAg, BioAb, BioAg, ChemAb, JEconLit, PAIS. *Bk. rev:* 2–8, approx. 1 page, signed. *Aud:* Ac, Sa.

A basic government publication in the area of agricultural economics. Each issue gives technical information based upon research and findings of a number of government divisions and departments on various aspects, e.g., prices, statistics, marketing, and methodology. While primarily for the professional, it has some value for both the student of agriculture and the economist.

Agricultural Education. 1929. m. $5. James P. Key. Agricultural Education Magazine, Inc. Subs. to: Charles W. Lebo, Business Manager, R.D. 2, P.O. Box 639, Halifax, Pa. 17032. Illus., index. Circ: 10,000. Sample. Vol. ends: June. Microform: UMI.

Indexed: BibAg, CIJE, Edl. *Bk. rev:* 1–3, 300 words, signed. *Aud:* Ejh, Hs, Ac.

Primarily intended for teachers of agriculture, especially for the high school vocational agricultural instructor. In each issue, articles center around one theme of particular interest to the vo-ag teacher: education for forestry and horticulture, continuing education, adult education, and agricultural education in foreign countries. The eight to twelve articles on research, education, and teaching methods and techniques are written by members of university agriculture departments and high school agriculture instructors. The book review department is an excellent way for the teacher to keep up with additional thinking in the field. Although really of interest only to the teacher of agriculture, it should be in any public or school library where agricultural courses are important. (J.E.M.)

Agricultural Engineering. 1920. m. $12. James Basselman. Amer. Soc. of Agricultural Engineers, 2950 Niles Rd., St. Joseph, Mich. 49085. Illus. Circ: 9,430. Vol. ends: Dec. Microform: UMI.

Indexed: BioAg, ChemAb, EngI. *Aud:* Ac, Sa.

Four to six articles describe research carried out by engineers working at universities, in private industry, and in government. Topics considered are new agricultural applications of instruments and controls, experimental farm systems, structures and machinery, and new methodology for teaching agricultural engineering in universities and colleges. Gives updates on government legislation as well as information on recently published government surveys, studies, etc. Lists of new books and recently published bulletins in the field are included in each issue, along with the usual news and notes on the activities of the American Society of Agricultural Engineers and its members. (J.E.M.)

Agricultural History. 1927. q. Membership (Nonmembers, $8; institutions, $10). James Shideler. Agricultural History Soc., Univ. of California, Agricultural History Center, Davis, Calif. 95616. Illus., index, adv. Circ: 1,400. Sample. Vol. ends: Oct. Microform: UMI.

Indexed: BibAg, BioAb, BioAg. *Bk. rev:* 10–20, approx. 1 page, signed. *Aud:* Ga, Ac, Sa.

Historical articles on agriculture in all areas of the world, with emphasis on the United States. Usually contains five or six scholarly monographs and a section giving news and notes on the Agricultural History Society's activities and members. Proceedings of pertinent symposia are frequently published. Because of its wide scope, it is useful to the student of both social and historical problems. (J.E.M.)

Agricultural History Review. 1953. s-a. £5. Membership (Nonmembers, £8). G. E. Mingay. British Agricultural His-

tory Soc., Museum of English Rural Life, The University, Whiteknights, Reading, Berkshire RG6 2AG, England. Illus., adv.

Indexed: BritHum. *Bk. rev:* 13–30, short essays, signed. *Aud:* Sa.

A scholarly 80- to 100-page journal that concentrates on the agricultural history of Great Britain. All periods and aspects of agriculture are considered by the Commonwealth contributors. Broader social, economic, and political aspects of agriculture are often discussed. Good book reviews and, from time to time, a useful supplement of 15 or more pages, "Work in Progress."

Agricultural Meteorology. 1964. bi-m. $90.50. W. Baier. Elsevier Pub. Co., P.O. Box 211, Amsterdam, The Netherlands; American Elsevier, 52 Vanderbilt Ave., New York, N.Y. 10017. Illus., index. Sample. Vol. ends: Nov.

Indexed: BibAg, BioAb. *Bk. rev:* 1–2, 300–500 words, signed. *Aud:* Ac, Sa.

An important international journal that reports on research into all atmospheric factors that influence plant growth and plant communities. Articles appear in English, French, and German, with abstracts in English, and are either reviews of current research or reports on original research work performed anywhere in the world. (J.J.)

Agriculture and Environment. 1974. q. fl.103. F. de Soet. Elsevier Scientific Pub. Co., P.O. Box 211, Amsterdam, The Netherlands; also 52 Vanderbilt Ave., New York, N.Y. 10017. Illus., index, adv. Sample. Vol. ends: Sept.

Indexed: BioAb, ChemAb, CurrCont, EcolAb. *Aud:* Ac, Sa.

Each issue contains four to nine fairly lengthy articles written by experts from all parts of the world. The subtitle of the journal is "an international journal for scientific research into the relationships between agriculture, food production and the management of the biosphere," and articles do reflect this perspective. A regular department, "Views and Ideas," offers short articles on problems of interest, such as "slowdown in crop yields." For large academic libraries with agriculture departments or science departments that include ecology/environment courses. (J.E.M.)

Agrologist. 1934. q. $6, Canada; $7, elsewhere. B. W. Roxburgh, Suite 907, 151 Slater St., Ottawa, Ont. KIP 5H4, Canada. Illus. Circ: 5,500.

Indexed: CurrCont. *Aud:* Ga.

Formerly: *AIC Review.* As a magazine for the farmer or anyone with more than a casual interest in agriculture, this is a useful publication. The subject matter of the main articles is popular in tone, concerned with such matters as the sad state of agricultural colleges, paper plans to make the land north of Alberta useful for farming, and inroads being made by women into the agricommunity. Developments in research are also covered in a very nontechnical fashion. Letters from readers delve into the mysteries of freight rates, the ever-unfriendly CPR, and demands for a more viable national agricultural policy on the part of the government. The magazine, to its credit, is not afraid to express and promote an editorial opinion on such matters. A must for rural facilities. (J.L.)

Agronomy Journal. 1907. bi-m. $22. Matthias Stelly. Amer. Soc. of Agronomy, 677 S. Segoe Rd., Madison, Wis., 53711. Illus., adv. Circ: 6,500. Vol. ends: Nov/Dec. Microform: UMI.

Indexed: BibAg, BioAg, ChemAb. *Aud:* Ac, Sa.

A technical journal for the scientist and teacher, made up primarily of 20 to 25 research papers by members of the American Society of Agronomy. The articles touch on anything related to the production and growing of field crops. Regular notes on members of the society, awards, and upcoming meetings are included. For large research libraries. (J.E.M.)

Agway Cooperator. See Free Magazines Section.

American Agriculturalist; Rural New Yorker (***American Agriculturalist*** and ***The Rural New Yorker*** combined in 1964). 1842. m. $4. Gordon L. Conklin, P.O. Box 370, DeWitt Bldg., Ithaca, N.Y. 14850. Illus., adv. Circ: 146,000. Sample. Vol. ends: Dec. Microform: UMI.

Aud: Ga.

This journal, a combination of two farming magazines that began publishing in the middle of the last century, is devoted to the good life of living and working on the farm. Articles are on different types of farming from dairy and poultry to field and orchard crops. Regular departments include consumer protection laws and practices, as well as how legislation in Washington affects the farmer. In addition to research, production, and marketing, the magazine contains articles of particular interest to the farm wife. It is a general agricultural magazine that would be a first or second choice in the northeastern states for all public libraries. (J.E.M.)

American Bee Journal. 1861. m. $6. Joe M. Graham & William R. Carlile. Dadant & Sons, Inc., Hamilton, Ill. 62341. Illus., adv. Sample. Vol. ends: Dec. Microform: UMI.

Indexed: BioAb, ChemAb. *Aud:* Sa.

A publication for the modern beekeeper with most of the articles on the practical aspects of keeping bees, a very few on research in the field. Each issue contains articles on the world honey market as well as bee and honey laws and regulations. Some articles are by researchers and university professors, but most are by professional beekeepers or farmers who raise bees in addition to crops and other animals. The angle is basically, "How to do beekeeping better"—improved techniques in pollination, building waterers, labeling honey, etc. Also included regularly are recipes using honey, plus news of meetings of interest. This magazine has a great many ads for equipment and for various kinds of bees. It would be very useful in libraries serving communities where beekeeping is widespread, as well as in academic libraries of schools that offer agriculture programs. (J.E.M.)

American Journal of Agricultural Economics. See Economics Section.

American Journal of Veterinary Research. 1940. m. $38. Arthur Freeman. Amer. Veterinary Medical Assn., 930 N. Meecham Rd., Schaumburg, Ill. 60172. Illus., index, adv. Circ: 4,700. Vol. ends: Dec. Microform: UMI.

Indexed: BibAg, BioAb, ChemAb, IMed. *Bk. rev:* 1,350 words, signed. *Aud:* Ac, Sa.

Primarily reports on original research in veterinary medicine and related areas such as agriculture and biomedicine. Authors are generally scholars or teachers working in the field, in universities, and in state extension services. The journal takes on an added dimension in that it not only reports on work in the United States but from major countries abroad. One very helpful feature is a regular list of upcoming certification examinations and meetings. A basic periodical for large research-oriented libraries in both veterinary science and agriculture. (J.E.M.)

American Veterinary Medical Association. Journal. 1869. s-m. $33. Arthur Freeman. Amer. Veterinary Medical Assn., 930 N. Meecham Rd., Schaumburg, Ill. 60172. Illus., index, adv. Circ: 27,850. Sample. Vol. ends: June/Dec. Microform: UMI.

Indexed: BibAg, BioAb, BioAg, ChemAb, IMed. *Bk. rev:* 3–5, 250 words, signed. *Aud:* Ac, Sa.

The basic journal in veterinary science. Includes eight to twelve articles, usually based on original research; news notes; announcements of meetings; personal notes; news on the latest laws and regulations that affect veterinarians; classified advertisements; and all of the other data usually associated with a major association journal. It is broader in scope than the *American Journal of Veterinary Research* (see above in this section) and is likely to include articles of interest to anyone remotely involved with animals, from pet owners to farmers. While written for the expert, it is a necessary item in larger agricultural collections; if one veterinary magazine is to be selected, this is the one for the average library. (J.E.M.)

Animal Production. 1959. bi-m. $42. J. A. F. Rook. Longman Group, Journals Division, 43 Annandale St., Edinburgh EH7 4AT, Scotland. Illus., index, adv. Sample. Circ: 2,500. Vol. ends: June/Dec.

Indexed: BioAb, BioAg, ChemAb, SCI. *Aud:* Ac, Sa.

Published by the British Society of Animal Production, this is the basic journal of its field in Britain. Each issue includes 15 to 17 articles on research findings in breeding, biochemistry, animal behavior, etc. Most of the material is applicable to the United States. Published annually, in the February issue, is the *Proceedings of the British Society of Animal Production:* "reports, reviews and papers presented at the Society's meetings or commissioned by the Society." A required journal in all agricultural libraries. (J.E.M.)

Australian Journal of Experimental Agriculture and Animal Husbandry. 1961. bi-m. $37. E. A. Jackson. Australian Inst. of Agricultural Science, National Science Centre, Clunies Ross House, 191 Royal Pde., Parkville, Victoria 3052, Australia. Illus. Circ: 1,800.

Indexed: BioAb, BioAg, ChemAb. *Aud:* Ac, Sa.

A 150-plus page journal on Australian agriculture with some applicability to U.S. agriculture. Each issue contains approximately 25 articles, all of which have brief abstracts, on sheep and cattle, pigs, meat, and crops, including crop protection. The material is highly technical and deals mainly with Australia. This is suitable for a specialized library or a large academic library where such technical, specialized information is of concern to researchers, teachers, and students. (J.E.M.)

California Agriculture. See Free Magazines Section.

Canadian Farm Economics. See Free Magazines Section.

Cattleman. 1914. m. $10. Paul W. Horn. Texas and Southwestern Cattle Raisers Assn., Inc., 410 E. Weatherford, Fort Worth, Tex. 76102. Illus., index, adv. Circ: 30,000. Vol. ends: May. Microform: UMI.

Indexed: BibAg. *Bk. rev:* 4, 75–100 words. *Aud:* Ga, Ac.

Emphasis is on cattle raising in the great Southwest, but this magazine has a popular following among cattlemen from all areas of the country. The articles are short, easy to read, and contain practical advice for every cattleman. Subjects range from descriptions of successful beef cattle operations to articles on new pasture grasses, veterinary care, rodeo animals, cattle breeding, cutting horses, etc. The major part of the space in each issue is advertising, but this advertising is more interesting and important than most, especially the notices of production sales and sales of beef cattle bulls. Also included are discussions of legislation affecting cattlemen and articles promoting meat and meat products. Special features include news of coming events of interest to cattlemen in the Southwest, a sales calendar, and news from the Texas and Southwestern Cattle Raisers Association. (J.J.)

Cattlemen; the beef magazine. 1938. m. $4, Canada; $6, elsewhere. Harold Dodds. Public Press, Ltd., 1760 Ellice Ave., Winnipeg, Man. R3H OB6, Canada. Illus. Circ: 43,000.

Aud: Ga.

Keepers of cattle have their own magazine here, and it is totally dedicated to their interests. Filled with information on what is happening in the individual provinces, it would appear to be just about everything that any cattleman would want, from promoting new uses for feedlot waste to encouraging a questionnaire on the federal government's involvement with the beef industry as a whole. New products and general market predictions form an important part of this magazine, as does a column broadly labeled "Cowboy Politics," outlining the good, bad, and ugly as far as the beefman is concerned. A not unimportant title for those who work the ranges and enjoy their libraries. (J.L.)

Ceres; the FAO review on development. 1968. bi-m. $8. Jose Felloso. Food and Agriculture Organization of the United Nations, Via delle Terme di Caracalla, 00100 Rome, Italy; Distributed by: Unipub, P.O. Box 433, Murray Hill Sta., New York, N.Y. 10016. Illus., adv. Vol. ends: Nov.

Bk. rev: 2–3, signed. *Aud:* Hs, Ga, Ac.

A journal of the Food and Agriculture Organization of the United Nations, it is concerned with agriculture and economy in developing nations. Emphasis is on developments in technology and financial and technical help from Western nations and private groups, as well as on agriculture and the environment with respect to water, soil, crop contamination, etc. Excellent charts and graphs, drawings, and photographs illustrate the articles, which are written by experts from universities and organizations concerned with agriculture, starvation, etc. A regular feature presents one or two lengthy interviews with an authority in the field, a government minister, or a farmer. Editions are available in English, French, and Spanish. Recommended before *World Crops and Livestock* (see below in this section) as a first choice for libraries needing a magazine that covers agricultural and economic development in the Third World. (J.E.M.)

Communications in Soil Science and Plant Analysis. 1970. bi-m. $62.50. J. Benton Jones, Jr. Marcel Dekker Journals, 270 Madison Ave., New York, N.Y. 10016. Sample. Vol. ends: No. 6.

Indexed: BioAb, ChemAb. *Aud:* Ac, Sa.

Scholarly research articles of 10 to 20 pages written by experts for the soil scientist and botanist. Articles are on soil content and analysis and how mineral makeup of soil affects crops. For academic libraries with programs in agriculture and botany. (J.E.M.)

Corn Annual. 1970. a. Free. Joyce A. Mattis. Corn Refiners Assn., Inc., 1001 Connecticut Ave. N.W., Washington, D.C. 20036. Circ: 8,500. Sample.

The subtitle, "Handbook of vital facts and figures about corn and news of the corn refining industry," indicates the scope and purpose. Several articles in each annual present topics relating to the economics of an ever-widening variety of the industrial and consumer products that come from corn; nutritional considerations and food uses of corn and its derivatives, and problems and research implications of diseases, pests, and their control. Such presentations implement the position that "because of its ability not only to innovate but more importantly to implement its innovations, the American corn industry continues to contribute substantially to our national economic well-being." Charts and tables in each issue are extensive and present a wealth of information relating to production, distribution, and use of corn and corn products. Most tabulations are interpreted briefly. Each issue highlights corn acreage and production by state and nationally for this country. Two- to three-page articles are fully credited to association officers and others of long experience in the industry and in government agencies. Some pertinent black-and-white photos are also used for illustration. Overall format is well conceived and adequate for its purpose. While not primarily a magazine in the sense of frequency of publication, *Corn Annual* will be of value to libraries serving agricultural institutions or schools offering agriculture courses where there is a need for corn statistics. Other libraries may find use for the material on nutrition and on food products from corn. (A.S.)

Cornell Veterinarian. 1911. q. $10. Lennart Crook. New York State Veterinary College, Cornell Univ., Ithaca, N.Y. 14853. Illus., index, adv. Sample. Circ: 1,300. Vol. ends: Oct.

Indexed: BioAb, BioAg, ChemAb, IMed. *Bk. rev.* 5–10, 500 words, signed. *Aud:* Ac, Sa.

Among the numerous journals of veterinary medicine that originate from universities and colleges, this one is among the top five. The eight articles and guest editorial are highly technical, presupposing that the reader is an advanced student or a practicing veterinarian. In specialized libraries this is a basic item, although for others it is enough to know its rank and place in the field. Consider for purchase only under special circumstances.

Country Guide; the farm magazine. 1882. m. $3. Dave Wreford. The Public Press, Ltd., 1760 Ellice Ave., Winnipeg, Man. R3H QB6, Canada. Illus., adv. Circ: 262,389. Sample. Vol. ends: Dec. Microform: UMI.

Indexed: BibAg. *Aud:* Ga, Ac.

This journal provides the Canadian farmer with information on improved methods, market forecasts, and problems of an agricultural nature in the various regions of Canada. Ten to twelve feature articles, one to three pages in length, are written in direct, concise style, and are largely the work of field editors of the magazine. Regular features include sections on beef, hogs, poultry, and soils and crops, with successful practices reported and new methods suggested. A full page is devoted to weather forecasts for the succeeding month, dividing Canada by province, and giving weekly prognostications for each. A supplement entitled "Dairy Guide," issued bimonthly and included in the issue, contains five to six short articles on the latest technology in dairy farming, as well as short reports on market trends, government programs, etc. Advertising is for farm and household products. While it is directed to Canada's farm population, there is much to commend this for any rural area where livestock is raised, or to schools and colleges with agricultural courses. (J.E.M.)

Countryside. 1917. 10/yr. $9. Jerome D. Belanger. 312 Portland Rd., Waterloo, Wis. 53594. Illus., index, adv. Circ: 25,000. Sample. Vol. ends: Dec.

Aud: Hs, Ga.

An excellent magazine dealing with day-to-day country living, this is not for the large-scale farmer. Rather, it is a practical guide for the homesteader and rural resident, filled with "how to" articles on everything from raising cows to harvesting crops to canning fruits. Regular features include one written by a veterinarian, a review of new tools and machinery, and five individual question/answer sections by experts on goats, bees, sheep, rabbits, and chickens. Readers are very visible in this magazine and contribute recipes, ideas, new methods, and advice throughout. Recommended for all libraries; a first choice among country living magazines for urban libraries. (J.E.M.)

Crops and Soils. 1948. 9/yr. $5. William R. Luellen. Amer. Soc. of Agronomy, 677 S. Segoe Rd., Madison, Wis. 53711. Illus., index, adv. Circ: 4,000. Sample. Vol. ends: Aug/Sept.

Indexed: BibAg, BioAb, BioAg, ChemAb. *Aud:* Ga, Ac.

This attractive periodical publishes approximately four five-page articles that are highly specialized, yet written in a readable style; they stress practical applications of farm research. Writers are extension agronomists, agronomy specialists, and professors in agricultural colleges. An interesting and unusual feature is a box on the title page giving the botanical names of all plants mentioned in the issue. A calendar of upcoming agricultural events is included in each issue. Useful in the high school library as well as in colleges.

Dairy Goat Journal. 1916. m. $9. Kent Leach. P.O. Box 19108, Scottsdale, Ariz. 85252. Illus., adv. Circ: 16,000. Sample. Vol. ends: Dec.

Indexed: BioAb. *Aud:* Hs, Sa.

The basic magazine for goat breeders of all ages, it reports news of the American Dairy Goat Association, the National Saanen Club, Alpines International, and the National Nubian Club. In keeping with its responsibilities to the ADGA, the journal announces all new herd names and lists all the registered breeders. Each issue contains several short articles on the care and grooming of goats, answers questions on medical problems, and contains recipes for goat products. Most articles are written by the veterinary editor or by readers. One-third of the articles devoted to young people are actually written by young goat raisers, including 4-H or FFA members. Advertising makes up approximately half of the journal. This is the marketplace for goat owners wishing to buy or sell their animals. Of interest only to the professional or semiprofessional goat breeder. (H.S.)

Eastern Africa Journal of Rural Development. 1968. s-a. $19. V. F. Amann. East Africa Agricultural Economics Soc. and the Dept. of Rural Economy and Extension, Makerere Univ., Univ. of East Africa, P.O. Box 7062, Kampala, Uganda. Vol. ends: July. Circ: 525.

Aud: Ac, Sa.

A journal showing all aspects of agriculture in the developing East African nations. In addition to technical discussions on livestock raising, crop growing, and new technology, article topics range from migrant labor and cooperative farming to marketing systems. Articles are approximately ten pages long and written by East African agriculturalists. Recommended for libraries that support international agriculture programs. Could also be of interest to students and professors of sociology and anthropology. (J.E.M.)

Eastern Grape Grower. 1975. m. $15. J. William Moffett. P.O. Box 329, Watkins Glen, N.Y. 14891. Illus., adv. Sample. Vol. ends: No. 12.

Aud: Sa.

Designed for the professional grape grower "in the East, in Canada, and in other parts of North America where certain horticultural conditions are met." An average 30-page issue includes short articles on growing conditions, equipment, markets, pest control, etc. Several useful features are included. Of some interest to amateurs, but primarily for the large farmer.

Farm and Country. 1936. s-m. $4. John Philips. Agricultural Pub. Co., 30 Bloor St. W., Toronto, Ont. M4W 1A2, Canada. Circ: 90,000.

Aud: Ga, Sa.

Farmers in Ontario will probably be familiar with *Farm and Country*, as this newspaper appears to be largely aimed toward them and their problems. This does not mean that matters important to farmers across the country are not considered, but an Ontario orientation is evident. A popular item written for every worker of the soil no matter what his preference, and coverage of everything from politics to cow lice is promised and produced. Advertisements are farmer-oriented as are announcements for future farm fairs, shows, auctions, property for sale, etc. An important addition for rural libraries in upper Canada, a secondary choice for those "out West," as they say. (J.L.)

Farm Index. 1962. m. $7.70. Daniel R. Williamson. U.S. Dept. of Agriculture, 14th St. & Independence Ave. S.W., Washington, D.C. 20250. Subs. to: Supt of Docs., U.S. Govt. Printing Office, Washington, D.C. 20402. Illus., index. Circ: 23,000. Sample.

Aud: Sa.

Directed to the farmer or layperson interested in agriculture, this is a purposely semipopular magazine. The articles, according to the editor, "are normally based on research and written in a popular style by the magazine staff editors." Most of the material is from research done by the department's Economic Research Service. Topics move from practical farming to consumer news to marketing to economics. Regular departments include news notes on current topics of interest to the farm community and annotations of recent publications by the sponsoring ERS and universities. "Economic Trends" is a monthly table showing the latest figures for 45 leading agricultural indexes, such as prices, farm income, and wages. The 24-page monthly is a useful addition to any library with an interest in agriculture.

Farm Journal. 1877. m. $5. Lane Palmer. Farm Journal, Inc., 230 W. Washington Sq., Philadelphia, Pa. 19106. Illus., adv. Circ: 1,5000,000. Vol. ends: Dec. Microform: UMI.

Indexed: RG. *Aud:* Hs, Ga, Ac.

Boasting the largest circulation of any general farm magazine, indexed in *Readers' Guide*, and directed to almost every interest of the farmer and the farm family, this is probably the best-known farm magazine in America. Approximately two-thirds of each well-illustrated number are devoted to business advice on farm production and management. *Farm Journal* rightfully claims to be "the business magazine of farming," a differs from its competitors in the attention it gives to economics as contrasted with the how-to-do-it aspects of other journals. Each issue includes business forecasts, describes new equipment, and runs late news from Washington and the trade involved with farming. Supplements entitled "Hog Extra" and "Beef Extra" are included 11 times per year and deal with meat prices, feeding, marketing, health, and breeding. Much emphasis is placed on the role of the woman as a business partner in management of the farm. Additional articles written for the

homemaker only are included. Useful in all public and high school libraries where agriculture and/or home economics are major interests. (J.E.M.)

Farmer's Digest. 1937. 10/yr. $5. H. Lee Schwanz. Farmer's Digest, Inc., 2645 Maple Hill Lane, Brookfield, Wis. 53005. Index, adv. Circ: 58,500. Sample. Vol. ends: Apr. Microform: UMI.

Aud: Ejh, Ga.

Similar in format to more familiar digests, this little magazine serves the same purpose for the busy farmer—a brief overview of current thought in his field. The 25 or so condensed articles are selected from as many periodicals to cover all phases of farm operations. They vary in length from 500 to 2,500 words. Interspersed with them are short comments by experts in farm management. The articles selected are highly practical and are easy to read. A useful, albeit far from necessary, acquisition for larger public library collections.

The Fence Rider. See Free Magazines Section.

Foreign Agriculture. 1937. m. $34.35. Kay Owsley Patterson. U.S. Dept. of Agriculture. Order from: Supt. of Docs., U.S. Govt. Printing Office, Washington, D.C. 20402. Illus., index. Circ: 10,000. Microform. UMI.

Indexed: BibAg, BioAb, BioAg, ChemAb, PAIS. *Aud:* Ga, Ac.

Usually gives 12 to 16 pages of information on U.S. involvement in agriculture in other countries, especially in developing nations. Examines U.S. agricultural export trade, overseas markets, competitive foreign production and trade, as well as grain donations. Regular "world supply estimates" for various products, surveys of retail food prices in selected world capitals, and food price index fluctuations in selected countries are featured. A useful reference on world agricultural trade, it can be used effectively in political and economics classes from senior high school through college and university levels. (J.E.M.)

Furrow. See Free Magazines Section.

Hoard's Dairyman; the national dairy farm magazine. 1885. s-m. $5. W. D. Knox. W. D. Hoard & Sons Co., 28 Milwaukee Ave. W., Fort Atkinson, Wis. 53538. Illus., index, adv. Circ: 298,399. Sample. Vol. ends: Dec. Microform: UMI.

Indexed: BibAg. *Aud:* Ga, Ac.

Each article is aimed at helping the dairy farmer get the most out of every hour of labor and dollar spent. It is a "how to" journal written by agricultural engineers and university professors. A great deal of emphasis is placed on the family farm and on youth activities. A two-page section entitled "Young Dairymen" highlights award winners of the 4-H and FFA, and tells of dairy-related careers by spotlighting young people who are doing such things as auctioneering or working on a dairy farm while majoring in business. An annual "bull list" ranks top active A.I. (artificial insemination) sires according to predicted differences for income. Also included are reports on meetings of interest, news from Washington, and articles that promote milk and milk products. There is a great deal of advertising aimed at the dairy farmer. This magazine is a must for all libraries in rural areas. (J.E.M.)

IH Forum. 1974. q. Free. Doug Holthaus. Intl. Harvester Co., 401 N. Michigan Ave., Chicago, Ill. 60611. Illus., adv.

Aud: Hs, Ga.

A 28-page company-sponsored magazine with a minimum of advertising, a maximum of full-color photographs, and objective editorial material, this is one of the better free magazines available. The policy is "to provide an open forum in print for farmers' points of view—to create a dialogue among farmers, agricultural experts and International Harvester. . . . " Each issue is devoted to one main theme and includes an article or two by a university professor in agriculture or another expert, an editorial, two articles by editors, a questionnaire, and a farm forum. The farm forum panel is made up of 10 to 15 farmers who dicuss the issue. Examples of issue themes are the survival of the family farm, estate planning, and marketing, to name three. Letters are included in each issue as well as results of the previous issue's questionnaire. The few advertisements are for IH machines; while International Harvester is footing the bill for the magazine, the company manages to maintain a low profile. Useful for just about any library from high school through the university. (J.E.M.)

Journal of Agricultural and Food Chemistry. 1953. bi-m. $10 (Nonmembers, $40). Philip K. Bates. Amer. Chemical Soc., 1155 16th St. N.W., Washington, D.C. 20036. Illus., index. Circ: 4,892. Vol. ends: Nov/Dec. Microform: Pub.

Indexed: BibAg, BioAb, BioAg, ChemAb, IMed. *Aud:* Ac, Sa.

Reports results of original research in the broad field of agricultural and food processing chemistry. This area includes research on pesticides (their mode of action and residue analysis), plant nutrients and regulators, chemistry of food processing, the chemistry of flavors, biochemistry of nutrition, and the nature and identity of food additives. Frequently, the first part of the journal is a symposium of eight to ten pages on a specific area of food chemistry. The articles are of a highly technical nature and useful either to the specialist or student in the fields of chemistry, chemical engineering, agronomy, entomology, and nutrition. For large research libraries. (J.J.)

Journal of Agricultural Engineering Research. 1956. q. $26.50. J. D. White. Academic Press, 111 Fifth Ave., New York, N.Y. 10003. Illus., index, adv. Circ: 1,000. Vol. ends: No. 4.

Indexed: BioAb, BioAg. *Bk. rev:* 1–2, 500 words, signed. *Aud:* Ac, Sa.

Published by Academic Press for the British Society for Research in Agricultural Engineering. In six to eight long articles and five to six shorter "research notes," scientists discuss theoretical and practical aspects of agricultural research in terms of irrigation, rainfall, and various types of equipment, from orchard sprayers to greenhouses. Authors are professors at universities. Heavy reliance is on mathematical formulas, models, and technical vocabulary. Only for advanced students of agricultural research.

Journal of Dairy Science. 1917. m. $30. L. D. McGilliard. Amer. Dairy Science Assn., 113 N. Neil St., Champaign, Ill. 61820. Illus., index, adv. Circ: 5,000. Sample. Vol. ends: Dec.

Indexed: BibAg, BioAb, BioAg, ChemAb. *Aud:* Ac, Sa.

A source of research on the dairy industry as a whole and on specific problems of manufacturing and production. Although the articles are scholarly, usually documenting original research, they tend to be more pragmatic in nature than those found in most scientific journals. Hence, the publication is not only of value to the teacher but also to the practicing farmer with some technical background. Some space in each issue is given to developments in teaching and education, and there are the usual news items about personalities and business of the American Dairy Association. A basic journal for larger libraries.

Journal of Soil Science. 1949. q. $45. A. Wild. British Soc. of Soil Science, Oxford Univ. Press, Press Rd., Neasden, London NW10 ODD, England. Illus., index. Circ: 1,400. Sample. Vol. ends: Dec.

Indexed: BioAb, BioAg, ChemAb. *Aud:* Ac, Sa.

Technical articles of monographic length on all aspects of pure and applied research in the field of soil science. Although published in England, the journal's coverage is worldwide, and articles are written by experts from all parts of the globe. Most of the findings would be of equal interest to researchers in the United States. An average 150- to 200-page issue includes 14 to 18 articles, all requiring a solid background in agricultural science. A highly specialized journal for research libraries.

Monthly Bulletin of Agricultural Economics and Statistics. 1948. m. $8. Statistics Division, Food and Agriculture Organization, Via delle Terme di Caracalla, 00100 Rome, Italy. Subs. to: Unipub, P.O. Box 433, New York, N.Y. 10016. Sample. Vol. ends: Dec.

Indexed: BioAg, PAIS. *Aud:* Ac.

Presents up-to-date statistical data by country, region, and continent on production, trade, and prices of agricultural commodities and on production, trade, and consumption of fertilizers. Data are compiled in tabular format and are easy to read. Additionally, selected issues give early indicators of agricultural production by economic region, and update the series by country of index numbers for food and agricultural production and food availability in terms of calories, protein, and fat.

National 4-H News. 1923. m. (June/July, Aug/Sept. combined). $5. Bonnie B. Starkett. National 4-H Council, 150 N. Wacker Dr., Chicago, Ill. 60606. Illus., index, adv. Circ: 90,000. Sample. Vol. ends: Dec.

Bk. rev: 2, 150 words. *Aud:* Ejh, Hs, Ga.

Published for adults and teens who lead 4-H clubs. To help youngsters between 9 and 19 from the inner city, suburbia, or farms have fun learning about all kinds of things, from aerospace and rocketry to photography, the art of clothing to veterinary science, or any of nearly 50 other subjects. Articles of one to five pages tell what's happening in 4-H throughout the country, and suggest how leaders anywhere might adapt new ideas to their own 4-H programs. Graphic design, including four-color cover, informal page design, and modern typefaces, reflect 4-H's expanded youth education programs. This and/or *The National Future Farmer* (see below in this section) should be in all junior and senior high school collections in both rural and urban areas.

The National Future Farmer. 1952. bi-m. $1. Wilson W. Carnes. Future Farmers of Amer., P.O. Box 15130, Alexandria, Va. 22309. Illus., adv. Circ: 522,684. Sample. Vol. ends: Aug/Sept.

Aud: Hs, Ga.

Directed to the 14- to 21-year-old students of vocational agriculture who are members of the Future Farmers of America (FFA) organization. The editorial policy encourages these students to seek careers in agribusiness and to develop their abilities in leadership and citizenship. Almost all articles deal specifically with FFA members—interviews with individuals or reports on activities. Also included are one or two stories, a number of cartoons, and a few articles of general interest particularly in the area of outdoor sports. Although primarily for members of the FFA, this will be of interest to many urban readers who are concerned with agriculture and youth.

New York Food and Life Sciences Quarterly. See Free Magazines Section.

Pesticides Monitoring Journal. See Environment and Conservation Section.

Pennsylvania Farmer. 1877. s-m. $5. Robert E. Williams. Harcourt Brace Jovanovich, 9800 Detroit Ave., Cleveland, Ohio 44102. Illus., adv. Circ: 100,000.

Aud: Hs, Ga.

This title is representative of a number of regional farm magazines that are available. All are relatively inexpensive—supported for the most part by advertising—and all share long histories. Most have been published for 100 years or more. The approach is similar: practical articles and news notes on aspects of farming throughout the state. Sections are devoted to farm wives, young people, and to various interests from state farm legislation to machinery and crop reports. It is all "folksy" and has a definite interest for anyone, regardless of age, who is actually farming or dreaming about farming.

Phytoparasitica; Israel journal of plant protection sciences. 1973. s-a. $10. E. Cohn & J. Rotem. Agricultural Research Organization, Volcani Center, Division of Scientific Publications, P.O. Box 6, Bet Dagan, Israel. Illus.

Indexed: BioAb, ChemAb. *Aud:* Ac, Sa.

1971 marked a reorganization of government-sponsored research in the field of agriculture and the creation of the Agricultural Research Organization (Israel) to coordinate this research. Since 1973, the ARO, in cooperation with the Phytopathological Society of Israel and the Weed Science Society of Israel, has been publishing *Phytoparasitica.* The journal offers original contributions, about 10 pages in length, in the fields of plant pathology, entomology, virology, nematology, and weed sciences. The scope of the periodical includes bio-

nomics, pesticides, and new approaches to the control of pests and diseases, particularly those occurring in subtropical and semiarid regions. Short communications on experimental evidence are also accepted. Abstracts of the annual meetings of the cosponsoring societies are included. (R.T.)

Poultry Digest. 1939. m. $5 for poultry farmers; $10, others. Roland C. Hartman. Garden State Pub. Co., Garden State Bldg., Sea Isle City, N.J. 08243. Illus., index, adv. Circ: 9,000. Sample. Microform: UMI.

Indexed: BioAg. *Aud:* Sa.

This is expressly for the poultry raiser, whereas *Poultry Science* (see below in this section) is not. Articles deal with flock performance and the control of poultry diseases. Research on vaccines and nutrition for chickens and turkeys is fully reported, as is research on breeding. Current problems in the industry, such as feed costs, egg handling, and broiler prices, receive equal treatment. All articles are signed and written by specialists in university agricultural departments or consultants. Special features include a "News and Views" section on recent happenings in the business; on future meetings and conventions; and on places to write for pamphlets and books on poultry raising. Should be in any library located in small farm and commercial poultry-raising areas.

The same publisher also issues *Feed Management, Broiler Industry, Egg Industry,* and *Petfood Industry.* (D.C.)

Poultry Science. 1908. bi-m. Membership (Nonmembers, $35). c/o Dr. C. B. Ryan. Poultry Science Assn., Texas A&M Univ., College Station, Tex. 77843. Illus., index. Circ: 3,700. Vol. ends: Nov. Microform: UMI.

Indexed: BibAg, BioAb, BioAg, ChemAb. *Bk. rev:* 2–6, 100–800 words, signed. *Aud:* Ac, Sa.

The most important U.S. journal reporting on current poultry research. Articles cover all aspects of poultry—anatomy, physiology, embryology, nutrition, housing, etc. This journal is designed primarily for the poultry researcher in universities, colleges, and private industry, and contains little of practical use to the poultry farmer or commercial poultry raiser. Special features include abstracts of papers presented at annual Poultry Science Association meetings, notes on current research topics, and news of association members and activities. (J.J.)

Progressive Farmer. 1886. m. $6 in southern states; $7 elsewhere. C. G. Scrugs. Progressive Farmer Co., P.O. Box 2581, Birmingham, Ala. 35203. Illus., adv. Circ: 1,100,000. Sample. Vol. ends: Dec. Microform: UMI.

Aud: Ga.

A regional, general farm magazine that is primarily concerned with agriculture in the South and Southwest. Editorial policy emphasizes family farms but recognizes also large-scale, corporate-owned farm operations. Articles tend to be short and informative, and are on practical matters such as machinery, crops, livestock, and the economics of farming, and include relevant recent research, such as farm uses of solar energy. A home section, "Southern Country Living," is devoted to matters of interest to farm wives. Published in regional editions (including 15 individual state and substate editions), it enjoys a circulation second only to *Farm Journal* (see above in this section). Certainly a first choice as a general agricultural publication in all libraries south of the Mason-Dixon line; for others, of limited interest. (J.E.M.)

Rural Advance. See Free Magazines Section.

Soil Science. 1916. m. $40 (Individuals, $23). John C. F. Tedrow. The Williams & Wilkins Co., 423 E. Preston St., Baltimore, Md. 21202. Illus., index. Circ: 2,804. Vol. ends: June/Dec. Microfrom: UMI.

Indexed: BibAg, BioAb, BioAg, ChemAb. *Bk. rev:* 8–10, 400–1,000 words, signed. *Aud:* Ac.

Contains original research papers in soils and in soil-plant problems written by researchers from around the world. An important journal, as its contributions by scientists from various countries report on soil research that is as varied as the soils that make up the earth's crust. For larger research libraries. (J.J.)

Soil Science Society of America. Journal. 1936. bi-m. $22. B. A. Stewart. Soil Science Soc. of America, 677 S. Segoe Rd., Madison, Wis. 53711. Illus., index, adv. Circ: 6,000. Vol. ends: Nov/Dec.

Indexed: BioAb, BioAg, ChemAb, Engl. *Bk. rev:* 5–10, 100–400 words, signed. *Aud:* Ac, Sa.

Articles are arranged by subject divisions: (1) soil physics; (2) soil chemistry; (3) soil microbiology and biochemistry; (4) soil fertility and plant nutrition; (5) soil genesis, morphology, and classification; (6) soil and water management and conservation; (7) forest and range soils; (8) fertilizer technology and use; and (9) soil mineralogy. Articles are three to six pages long, very technical, and are based on current research. They are written by university professors, graduate students, and U.S.D.A. research soil scientists and technicians, as well as by foreign agriculture specialists. Articles are illustrated with many graphs and charts. Announces upcoming meetings the world over. This journal is international in perspective and useful for all soil scientists, regardless of country, because it studies the soils of the world. For large research libraries with departments or specialized programs in soil science. (J.E.M.)

Successful Farming. 1902. m. $5. Dick Hanson. Meredith Pub. Co., 1716 Locust St., Des Moines, Iowa 50303. Illus., adv. Circ: 750,000. Sample. Vol. ends: Nov/Dec. Microform: UMI.

Indexed: BibAg, BioAb, RG. *Aud:* Hs, Ga, Ac.

In many ways this is similar to *Farm Journal.* It professes to emphasize economics as much as its rival, is national in scope, and covers much the same material. Format, writing style, and editorial approach are similar, and it is indexed by *Readers' Guide.* The articles are practical and informative, and deal with problems solved on working farms. Articles are arranged in sections by topic: farm management, crops, livestock, and machinery. A choice between this and *Farm Journal* is more a matter of personal choice than anything else.

Tropical Agriculture. 1924. q. $26. H. K. Ashby. IPC Science and Technology Press, 32 High St., Guildford, Surrey GU1 3EW, England. U.S. address: IPC Business Press, Ltd., 205 E. 42nd St., New York, N.Y. 10017. Illus., index, adv. Sample. Circ: 1,376. Vol. ends: Oct.

Indexed: BioAb, BioAg, ChemAb, SCI. *Bk. rev:* 5–7, 150–250 words, signed. *Aud:* Ac, Sa.

The journal of the faculty of agriculture at the University of the West Indies. Publishes 10 to 15 original articles on aspects of tropical agriculture, but these are not limited to the West Indies. Articles on Africa and South America are included. A good deal of the material is applicable to all tropical areas, and for this reason, the journal is the standard one employed by faculty and students in this discipline. Primarily used at the academic level, and in no way applicable at the "how to do it" stage.

Veterinary Medicine/Small Animal Clinician. 1905. m. $15. Carlos M. Cooper. Veterinary Medicine Pub. Co., 144 N. Nettleton, Bonner Springs, Kans. 66012. Illus., index, adv. Circ: 14,059. Vol. ends: Dec. Microform: UMI.

Indexed: BibAg, BioAb, BioAg, ChemAb, IMed. *Bk. rev:* 2, 400 words. *Aud:* Ac, Sa.

Covers all aspects of veterinary medicine for the specialist and the advanced student. Articles review general practice, pet practice, equine practice, exotic species, and agripractice. As this is for the practicing veterinarian, about one-quarter of each issue is devoted to management of a vet hospital or clinic, personal notes, new products, and news of the field. There are many useful features including bibliographies, case histories submitted by readers, and abstracts of articles of interest from other journals. Not for the amateur, but a necessary addition for any large agricultural or animal collection.

War on Hunger. See Free Magazines Section.

World Animal Review. 1972. q. $8. P. Mahadevan. Food and Agriculture Organization of the United Nations, Via delle Terme di Caracalla, 00100 Rome, Italy. Subs. to: Unipub, P.O. Box 433, New York, N.Y. 10016. Illus.

Indexed: BioAb. *Bk. rev.* 8–15, 100 words, signed. *Aud:* Ac.

An illustrated UN publication of some 50 pages covering "developments in animal production, animal health, and animal products with particular reference to these spheres in Asia, Africa and Latin America." Each issue contains seven to eight articles on feeding, breeding, animal pests and parasites, veterinary medicine, and the development of new sources of food for animals. Frequently, there are discussions of individual indigenous animals as meat, milk, and work sources. Articles are illustrated with black-and-white photographs, as well as graphs and charts showing various aspects of the state of world agriculture. The writing is by experts and presupposes a knowledge of the subject. Books available from the FAO and upcoming symposia and congresses are listed. With three language editions available (English, Spanish, and French), this is one of the many excellent FAO publications that can be recommended where needed for all libraries. (J.E.M.)

World Crops and Livestock. 1949. bi-m. $15. K. W. Bean. World Crops Publ., Ltd., 40 Wellington St., London WC2E 7BD, England. Illus., index, adv. Vol. ends: Nov/Dec. Circ: 3,348. Microform: UMI.

Indexed: BibAg, BioAg, BritTechI, ChemAb. *Aud:* Ga, Ac.

Formerly: *World Crops.* Contains short, three- or four-page articles written by agriculturists from all over the world. The articles usually discuss developments in crop production, plant propagation, plant protection, and recent agricultural techniques introduced in the developing countries of Southeast Asia, Africa, and Latin America. Included also are short news notes, commodity reports, special research reports, and short papers on new agricultural implements and machinery. One-third of the journal is called "Farm Machinery and Equipment," and includes three to five short articles on new machines, irrigation, etc.

This is one of several journals concerned with agriculture in developing nations. Others include *World Agriculture,* published quarterly by the International Federation of Agricultural Producers, *World Farming,* published monthly by Intertec Publishing Corp., and *Ceres,* published by the Food and Agriculture Organization of the United Nations. (See *Ceres*, above in this section.) Either *Ceres* or *World Crops and Livestock* is a good first choice for libraries that want a magazine covering international agricultural development. (J.J.)

TRADE AND PROFESSIONAL ORGANIZATIONS

SERVICES & PRODUCTS

A variety of services and products can be obtained from the following trade and professional organizations. One should write to them to find out about publications and services offered to educators.

The following listings were taken from the Maryland Agricultural Organizations Directory, July 1978.

GENERAL

AGWAY, INC.
Enos B. Heisey
Manager, Community Relations
Box 1333
Syracuse, New York 13201

AMERICAN REGISTRY OF PROFESSIONAL ENTOMOLOGISTS
Dr. John Gorham, President
(Chesapeake Chapter)
HFF 127
Food & Drug Administration
200 C Street, S. W.
Washington, D. C. 20204

CENTRAL MARYLAND FARM EQUIPMENT DEALERS ASSOCIATION
Mr. L. L. Barnes
4410 Salem Bottom Road.
Westminster, Maryland 21157

CENTRAL MARYLAND BEEKEEPERS ASSOCIATION
Ted Merchant, President
742 Mansfield Road
Baltimore, Maryland 21221

COLLEGE OF AGRICULTURE ALUMNI CHAPTER
Edwin R. Fry
Box 390, Fair Hill Farm
Chestertown, Maryland 21620

CHOPTANK ELECTRIC COOPERATIVE, INC.
O. O. Stivers
Director, Public Relations & Member Service
Box 430
Denton, Maryland 21629

MAR-DEL-VA FARM EQUIPMENT ASSOCIATION
Millard Eyler, Executive Secretary
Winchester, Virginia 22601

MARYLAND AGRICULTURAL COMMISSION
Peter B. Ramaly, Executive Secretary
Parole Plaza Office Building
Annapolis, Maryland 21401

MARYLAND AGRICULTURAL LAND PRESERVATION FOUNDATION
A. R. Musselman, Executive Director
Parole Plaza Office Building
Annapolis, Maryland 21401

MARYLAND ASSOCIATION OF COUNTY AGRICULTURAL AGENTS
Walter C. Bay
County Office Building
55N Court Street
Westminster, Maryland 21157

MARYLAND CHAPTER, FARM & LAND INSTITUTE
R. Thomas Thayer, Jr., President
Garrett Land Realty
Oakland, Maryland 21550

MARYLAND COUNCIL OF FARMER COOPERATIVES
Patrick H. Murray, President
Southern States Cooperative Inc.
P.O. Box 1436
Balitmore, Maryland 21203

MARYLAND ELECTRIFICATION COUNCIL
Harry G. Saufley
Potomac Edison Company
Downsville Pike
Hagerstown, Maryland 21740

MARYLAND AGRICULTURAL SAFETY AND HEALTH FEDERATION
Mrs. Catherine Dudrow
RT. 1, Box 5
Easton, Maryland 21601

MARYLAND FARM BUREAU
Jack Matthews, Executive Secretary
Box 337
Randallstown, Maryland 21133

MARYLAND PEST CONTROL ASSOCIATION
William Fell
3219 McElerry Street
Baltimore, Maryland 21205

MARYLAND STATE BEEKEEPERS ASSOCIATION
Earl Edmunds, President
RT. 3, Box 364
Arnold, Maryland 21012

MARYLAND STATE DEPARTMENT OF AGRICULTURE
Young D. Hance, Secretary of Agriculture
Parole Plaza Office Building
Annapolis, Maryland 21401

MARYLAND STATE FAIR BOARD
Frank D. Brown, Jr., Chairman
Maryland State Fairgrounds
Timonium, Maryland 21093

MARYLAND STATE FAIR & AGRICULTURAL SOCIETY, INC.
Howard M. Mosner, Jr., Vice President & General Manager
Maryland State Fairgrounds
Timonium, Maryland 21093

MARYLAND STATE GRANGE
Rodman Myers, Master
Maryland State Grange
Thurmont, Maryland 21788

MARYLAND VETERINARY MEDICAL ASSOCIATION
Dr. R. Gary Roop, President
6215 Baltimore, Avenue
Riverdale, Maryland 20840

MARYLAND VOCATIONAL AGRICULTURE TEACHERS ASSOCIATION
Madison Brown, President
Worton, Maryland 21678

SOUTHERN MARYLAND ELECTRIC COOP., INC.
Walter Smith, Manager
Hughesville, Maryland 20637

SOUTHERN STATE COOPERATIVE
Paul Mullinix, Group Vice President
Box 1656
Richmond, Virginia 23213

AGRONOMY

DELAWARE-MARYLAND PLANT FOOD ASSOC., INC.
William H. Henderson, Secretary
RT 2, Box 48
Georgetown, Delaware 19947

DELMARVA FERTILIZER ASSOCIATION
Tom Shockley, President
William B. Tilghman Company

GREATER WASHINGTON GOLF COURSE SUPERINTENDENT ASSOCIATION
Mr. Craig Spotswood, President
9015 Springhill Lane
Chevy Chase, Maryland 20015

MARYLAND ASSOCIATION OF SOIL CONSERVATION DISTRICTS
William S. Sutton, President
Box 41
Chestertown, Maryland 21620

MARYLAND CROP IMPROVEMENT ASSOCIATION
Leon Schmick, President
Preston, Maryland 21655

MARYLAND TOBACCO GROWERS ASSOCIATION
Jack Cross, General Manager
P.O. Box 48
Cheltenham, Maryland 20623

MARYLAND TOBACCO IMPROVEMENT FOUNDATION, INC
Edward T. Gieske, President
Gieske & Nieman
P.O. Box 128
Upper Marlboro, Maryland 20870

MARYLAND TURFGRASS ASSOCIATION, INC.
Mr. Walter Livingstone, President
Fairwood Turf Farm
RT. 450
Glenn Dale, Maryland 20769

MARYLAND TURFGRASS COUNCIL
Mr. Richard Moffett, Chief Agronomist
Maryland State Highway Department
2323 West Joppa
Brooklandville, Maryland 21022

MID-ATLANTIC GOLF COURSE SUPERINTENDENTS' ASSOCIATION
Mr. William J. Emerson
Chevy Chase Country Club
6100 Connecticut Avenue
Chevy Chase, Maryland 20015

MID-ATLANTIC SOYBEAN ASSOCIATION
Leon Schmick, President
Preston, Maryland 21655

STATE SOIL CONSERVATION COMMITTEE
Arnold Hawkins, Executive Secretary
Parole Plaza Office Building
Annapolis, Maryland 21401

STATE TOBACCO AUTHORITY
John Schillinger, Executive Secretary
Tobacco Warehouse
Cheltenham, Maryland 20623

TRI-COUNTY FIELD CROP ADVISORY COUNCIL
Robert Rouse, Secretary
Federal Building
Denton, Maryland 21629

UPPER EASTERN SHORE CROPS ADVISORY COUNCIL
George D. Underwood, Chairman
RT. 1
Northeast, Maryland 21901

WEED ADVISORY COMMISSION
Allen Stradley, Chairman
Chestertown, Maryland 21620

DAIRY

CAPITAL MILK PRODUCERS COOPERATIVE, INC.
William Kaiser, Executive Secretary
8920 Whiskey Bottom Road
Laurel, Maryland 20810

DAIRY COUNCIL OF THE GREATER METROPOLITAN WASHINGTON, D. C.
Miss Jeanne Clarke
Executive Director
7315 Wisconsin Avenue
Washington, D. C. 20014

DAIRY COUNCIL OF THE UPPER CHESAPEAKE BAY
Judy Strehan, Executive Director
202 Carroll Building
8600 La Salle Road
Towson, Maryland 21204

INTER-STATE MILK PRODUCERS' COOPERATIVE
J. E. Honan, Manager
1225 Industrial Highway
Southampton, Pennsylvania 18966

MARYLAND ARTIFICIAL BREEDING ASSOCIATION
Seth K. Schnebley, President
RFD 1
Clear Springs, Maryland 21722

MARYLAND COOPERATIVE GUERNSEY BREEDERS ASSOCIATION
John H. Hull, Jr., President
1028 Sullivan Road
Westminster, Maryland 21157

MARYLAND COOPERATIVE MILK PRODUCERS, INC.
R. L. Strock, Business Manager
1717 Gwynn Oak Avenue
Baltimore, Maryland 21207

MARYLAND DAIRY GOAT ASSOCIATION, INC.
Mr. Roy VanDerLinden
RT. 1, Box 116A
New Windsor, Maryland 21776

MARYLAND DAIRY HERD IMPROVEMENT CORPS.
Edwin R. Fry, President
Box 390
Chestertown, Maryland 21620

MARYLAND DAIRY SHRINE
Grayson Bowers, President
Box 555
Frederick, Maryland 21701

MARYLAND-DELAWARE AYRSHIRE BREEDERS ASSOC.
Ralph Shank, President
RT 3, Box 326
Hagerstown, Maryland 21740

MARYLAND-DELAWARE BROWN SWISS CATTLE BREEDERS ASSOCIATION
Robert Sigler, President
RT 1, Box 204A
Middletown, Maryland 21769

MARYLAND HOLSTEIN FRIESIAN ASSOCIATION
Irving King
11411 Kingstead Road
Damascus, Maryland 20750

MARYLAND JERSEY CATTLE CLUB
J. Hansen Hoffman, President
Ridgley, Maryland 21660

MARYLAND MASTITIS COUNCIL
Melvin Leppo, President
5245 Freter Road
Sykesville, Maryland 21784

MARYLAND & VIRGINIA MILK PRODUCERS ASSOCIATION, INC.
J. E. Click, Manager
Box 9154, Rosslyn Station
Arlington, Virginia 22209

PENNMARVA DAIRYMEN'S FEDERATION, INC.
Richard Dudderar
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